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Draft EIR Publication Date: November 7, 1991
Draft EIR Public Hearing Date: December 12, 1991
Draft EIR Public Comment Period: November 7 to December 23, 1991

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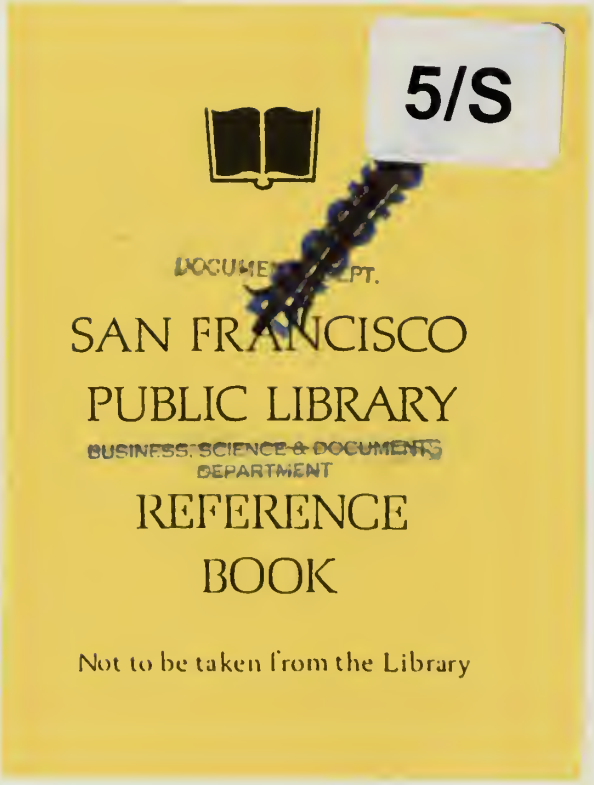

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TO: Distribution List for the San Francisco New Main Library Project Draft EIR

FROM: Barbara W. Sahm, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the San Francisco New Main Library Project

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This is the Draft of the Environmental Impact Report for the San Francisco New Main Library project. A public hearing will be held on the adequacy and accuracy of this document. After the public hearing, our office will prepare and publish a document titled "Summary of Comments and Responses" which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments. It may also specify changes to this Draft EIR. Those who testify at the hearing on the draft will automatically receive a copy of the Comments and Responses document along with notice of the date reserved for certification; others may receive such copies and notice on request or by visiting our office. This Draft EIR together with the Summary of Comments and Responses document will be considered by the City Planning Commission in an advertised public meeting and certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Comments and Responses document and print both documents in a single publication called the Final Environmental Impact Report. *The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution.* It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Comments and Responses document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Summary of Comments and Responses have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR to private individuals only if they request them.

If you want a copy of the Final EIR, please so indicate in the space provided on the next page and mail the request to the Office of Environmental Review within two weeks after certification of the EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy. Public agencies on the distribution list will automatically receive a copy of the Final EIR.

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Attn: Carol Roos, EIR Coordinator
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TO: Department of City Planning,
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INTRODUCTION

This Environmental Impact Report, for the purposes of impact analysis, evaluates the effects of development on three parcels, referred to as the New Library block (Marshall Square), the Asian Art Museum block, and the Fulton Street Mall. As described in the EIR, these individual development programs have different project sponsors, funding sources, and timetables, and each is at a different stage in the development process. The New Main Library is furthest along, with funding secured through passage of a bond measure, Proposition A, in November 1988. Architects for the new library were selected in June 1989, and the building design has been given preliminary approval by the San Francisco Arts Commission, which has legal authority under the City Charter to approve the design of public buildings. (Final approval cannot be given until certification of this EIR by the City Planning Commission.) The Asian Art Museum, which would be constructed primarily in the existing Main Library, and the Fulton Street Mall, proposed for Fulton Street between the new library and the museum, are in the early planning stages, while more information is available regarding the New Main Library. For these reasons, the EIR analyzes the potential impacts of all three development programs as they presently exist. While evaluating the impacts of the two other proposals that can be known from their development programs, the EIR concentrates on describing the New Main Library and its potential impacts in greater detail.

The word, project, is used in this EIR to refer to all three components: the New Main Library, the Asian Art Museum, and the Fulton Street Mall; project site, refers to all three sites. Where one component of the project is discussed separately, it is specifically referenced. The new library site (the block bounded by Larkin, Fulton, Hyde, and Grove Streets) is referred to as the New Library block and as Marshall Square. The site of the existing Main Library (the block bounded by Larkin, McAllister, Hyde, and Fulton Streets) is referred to as the Asian Art Museum block. Fulton Street Mall, refers to Fulton Street between the New Library block and the Asian Art Museum block, and Larkin and Hyde Streets.

This EIR incorporates some information from the Mission Bay EIR (Case No. 86.505EMTZ, Final EIR certified August 23, 1990) and from the South of Market EIR (Case No. 85.463E, Final EIR certified December 7, 1989). Incorporation by

reference with a summary is used pursuant to CEQA Sections 21061 and 21100 (see also CEQA Guidelines Sec. 15150). These documents are available for public review at the San Francisco Department of City Planning, 450 McAllister St., San Francisco; the San Francisco Main Library; and various branch libraries.

I. SUMMARY

A. PROJECT DESCRIPTION

The San Francisco Library Commission proposes to build a new Main Library on Marshall Square in the San Francisco Civic Center, with funding from a voter-approved bond measure. Following relocation of the library, the existing library building would be remodeled and expanded to contain the Asian Art Museum, currently located in Golden Gate Park. This portion of the project would be carried out by the Asian Art Commission, with separate funding. The San Francisco Department of Public Works would construct a pedestrian mall in the block of Fulton Street between the existing Main Library and the new library, assuming separate funding becomes available. The architects for the New Main Library are Pei Cobb Freed & Partners of New York and Simon Martin-Vegue Winkelstein Moris of San Francisco, associated architects.

The New Main Library would be constructed on Marshall Square, the block bounded by Fulton, Hyde, Grove, and Larkin Streets (Assessor's Block 354, Lot 1). The Asian Art Museum would be relocated to the existing library building on the block directly north, bounded by McAllister, Hyde, Fulton, and Larkin Streets (Assessor's Block 353, Lot 1). The planned Fulton Street Mall would occupy Fulton Street between the two buildings, and between Hyde and Larkin Streets. The project would replace a 7,950-sq.-ft., single-story City office building (100 Larkin Street), which would be demolished; a 45,000-sq.-ft., three-story City office building (45 Hyde Street); a 130-space surface parking lot; 90 parking spaces on Fulton Street; and 17 parking spaces associated with the existing library and the 100 Larkin Street buildings, and would include relocation of the Pioneer Monument sculpture group to another Civic Center site.

The proposed New Main Library would be a six-story-plus-basement structure, approximately 80 feet tall, with about 397,000 sq. ft. of floor area. It would be set back from the property line approximately 40 feet along the west (Larkin Street) and north (Fulton Street) frontages in a manner similar to the existing library building.

Entrances would be located on Larkin, Fulton, and Grove Streets. Vehicle access for loading and City vehicle parking would be from a ramp on Hyde Street, which would replace the existing truck ramp to Brooks Hall, and serve both Brooks Hall and the new library. One two-bay truck loading dock, one delivery van space, two bookmobile spaces, and parking for seven City-owned vehicles would be included. Brooks Hall loading facilities would be by way of the new ramp through the library loading area. Concurrently, new pedestrian access to Brooks Hall, to replace the existing access via the truck ramp sidewalk, would be constructed at the Civic Auditorium, while new exit-only stairs from Brooks Hall would be constructed on the east side of Larkin Street, just west of the New Main Library.

Architecturally, the Larkin Street (west) and Fulton Street (north) facades of the New Main Library would be similar in style to the existing Beaux Arts library, with exterior granite cladding. The Hyde Street (east) facade and most of the Grove Street (south) side of the new library would use the same exterior granite, but would be contemporary in design. The lower level (basement) would include a 300-seat auditorium and meeting rooms seating another 250 persons.

The library interior would include a central, skylit atrium extending from the Main Floor (partially below grade) to the building roof; L-shaped lightwells parallel to Fulton and Larkin Streets; book stacks, work and study areas, as well as special interest facilities and collections, of various dimensions and layouts; and a separate children's area. Access to all library services would be via a single control / security point. The entry areas of the Main Floor and Upper Main Floor, and through access between Fulton, Grove, and Larkin Streets, would be accessible without entering the library's collections / service areas.

Excavation would be required for the New Main Library, with a maximum depth of excavation of about 35 feet below grade.

With construction of the New Main Library, the Pioneer Monument, currently located at Hyde and Grove Streets on the southeast corner of the New Library block, is proposed to be relocated to another site in the Civic Center.

The project analyzed in this EIR includes the conversion of the existing Main Library building to house the Asian Art Museum, which now occupies one wing of the M.H. deYoung Museum building in Golden Gate Park. The Asian Art Museum would occupy the entire existing library building. Included in proposed renovations would be seismic strengthening, adding floor space to the existing building by replacing the existing library stacks with gallery, office and work space, and installing a new mezzanine level in the stack area, and demolishing the City office building at 45 Hyde Street, replacing it with an addition to the existing library building. Including this addition, the building would expand from approximately 174,000 sq. ft. to about 224,000 sq. ft. The new museum would include an auditorium/theater seating approximately 400 persons.

Alternatively, the Asian Art Museum would not include construction of the addition at 45 Hyde Street but would instead create additional gallery space in the south (Fulton Street) reading room by construction of a partial mezzanine within this room. Exterior alterations to the existing building would be the same under this plan. The proposal including the 45 Hyde Street addition is examined in this EIR for purposes of a conservative analysis.

Contingent on the success of a future bond issue, the Fulton Street Mall would be created, connecting Civic Center Plaza with United Nations Plaza and Market Street to the east.

Total net changes in the area for the project site would be: an increase in building area of approximately 400,000 sq. ft., including the New Main Library, remodeling and expansion of the existing library building, demolition of 45 Hyde Street and 100 Larkin Street; a decrease in public parking of 220 spaces and in employee parking of about 15 spaces; an increase in city vehicle parking of seven spaces and an increase of two loading spaces; and an increase in open space of about 60,000 sq. ft., including construction of the Fulton Street pedestrian mall and elimination of open space surrounding the 100 Larkin Street building. The project site is in a P (Public Use) zoning district. The proposed uses would be principal permitted uses in this district. The New Library block and the Asian Art Museum block are both within an 80-X Height and Bulk District, while the Fulton Street Mall site is within an OS (Open Space) district. The project would comply with the height and bulk limits for the site.

The New Main Library would require approval by the Library Commission and a finding of consistency with the San Francisco Master Plan. The Arts Commission must approve relocation of the Pioneer Monument. In addition, the project sponsors (the San Francisco Library Commission for the New Main Library, Asian Art Commission for the Asian Art Museum) must obtain building and related permits from the Central Permit Bureau of the Department of Public Works.

Construction of the New Main Library is expected to take about 30 months, with about nine additional months projected for the furnishing and the transfer of library facilities to the new building. A six-month 'early excavation' period is planned for 1992 to uncover potential subsurface cultural resources on-site. The cost is projected at approximately $77 million (1990 dollars). The Library Commission expects the new building to be ready for occupancy by September 1995, with public opening scheduled for March 1996. Remodeling and expansion of the existing Main Library building to accommodate the Asian Art Museum would begin after completion of the New Main Library and relocation of all library services to the new building; it is expected to take a minimum of two years and cost approximately $55 million (1990 dollars). Occupancy by the museum is proposed for late 1998. Construction plans and schedule of the proposed Fulton Street Mall are not yet formally defined but if approved, it probably would be completed by 2000. Relocation of the monument could take two to four months.

B. MAIN ENVIRONMENTAL EFFECTS

ARCHITECTURAL, HISTORIC AND CULTURAL RESOURCES (pp. 81 to 86)

Architectural and Historic Resources

The project site contains four structures: a single-story City office building (100 Larkin Street) and the Pioneer Monument sculpture group on the New Library block, and the existing Main Library and a three-story City office building (45 Hyde Street) on the Asian Art Museum block. The Main Library was assigned the highest rating of "5" in the 1976 Department of City Planning Architectural Inventory and the highest rating of "A" by the Foundation for San Francisco's Architectural Heritage (1984 unpublished survey); it is considered a Contributory building in the proposed City Civic Center Historic District. The Pioneer Monument was also rated "5" in the

DCP Inventory. The 45 Hyde Street building is designated Noncontributory in the proposed Civic Center Historic District and was not rated in the 1976 DCP Inventory or by Heritage. The 100 Larkin Street building is considered Noncontributory in the proposed Civic Center Historic District and was rated "2" in the 1976 DCP Inventory and "B" by Heritage. The Civic Center is listed as both a National Historic Landmark District and as a Historic District on the National Register of Historic Places.

As part of conversion of the existing Main Library to the Asian Art Museum, the facades of the existing structure would not be altered, with the following exceptions: the inscription identifying the building and the large concrete statues above the Larkin Street entrance would be removed, as would the names of literary figures inscribed on the building. Two entrances are planned to replace the present single doorway on the Fulton Street side, and windows at the street level of this side of the building would be extended down to ground level to let more light into the entry spaces. Plans for conversion are preliminary and are based on the feasibility study prepared for conversion of the library to the Asian Art Museum. The 45 Hyde Street building would be demolished and replaced with a two-story addition to the existing library building. The existing building cornice line would be continued at its present height along both McAllister and Hyde Streets. The McAllister Street frontage would be extended to Hyde Street, continuing the existing pattern of recessed windows and the cornice line. Major existing interior spaces would be retained in the proposed Asian Art Museum. (If the Hyde Street addition were not built, some new floor space would be constructed by adding a partial mezzanine within the existing south reading room on the second floor). The 100 Larkin Street office building would be demolished for construction of the New Main Library. The Pioneer Monument would be relocated within the Civic Center.

Cultural Resources

During the Prehistoric Period, the project site and surrounding area represented a favorable setting for aboriginal encampments. A number of prehistoric sites have been recorded in San Francisco; one site was uncovered within one mile of the proposed New Main Library. The possibility exists that similar prehistoric cultural materials may exist within the proposed project site. There is little likelihood of encountering cultural resources from the Spanish and Mexican Periods. The project area was the

location of San Francisco' first official cemetery, and there is a possibility of encountering cultural remains dating from as early as 1850. It is also possible that architectural/cultural remains may exist from the late 19th century City Hall, which was located in an area that included the project site. Excavation for construction of the New Main Library would be to a depth of about 30 to 35 feet below grade, while excavation for seismic strengthening of the existing library and for the proposed Asian Art Museum addition to the existing library would be to about 20 feet below grade.

URBAN DESIGN AND VISUAL QUALITY (pp. 87 to 101)

The project site is located in the San Francisco Civic Center, which includes a group of monumental public buildings reflecting the Beaux Arts inspired City Beautiful movement.

The New Main Library would be similar in height and building envelope to the existing library. The Fulton Street and Larkin Street facades are designed to reflect the Beaux Arts architecture of the existing major public buildings in Civic Center. The Hyde Street and Grove Street facades would be of more modern, unembellished design, with a large rectangular element set off from square with the rest of the building and parallel to Market Street. The New Main Library would block existing public views of City Hall from the intersection of Hyde, Eighth and Market Streets. City Hall would remain in view from United Nations Plaza and from the Fulton Street Mall, once construction of the New Main Library was completed. New public views of City Hall and Civic Center would be available from the New Main Library.

Renovation of the existing Main Library would not result in any changes in views from the project site. Views of the Hyde Street and McAllister Street sides of the library would be altered by the two-story addition that is intended to be compatible with the existing Library building.

Long-range views of the Civic Center would not be altered by the project. From places where the New Main Library would be visible, such as parts of the eastern slope of Twin Peaks and from Nob Hill, it would appear as part of the group of structures in the Civic Center.

SHADOW AND WIND (pp. 101 to 118)

The New Main Library would cast new shadow on Civic Center Plaza, which is protected by the City's sunlight ordinance (City Planning Code Section 295), but not in excess of the Absolute Cumulative Limit established by the City Planning and Recreation and Park Commissions. Thus the project would comply with the ordinance. The New Main Library would cast new shadow on United Nations Plaza and on the proposed Fulton Street Mall. The proposed Asian Art Museum addition to the existing library building would not shade any of these three open spaces. It would add shadow to the elevated plaza in front of Hastings College of the Law at 198 McAllister Street at Hyde Street. Both project components would add new shadow to surrounding streets, sidewalks, and buildings in the project area.

A wind tunnel test was conducted for the project. Of the 43 locations examined in the wind-tunnel study, there are 29 locations where the 11-miles per hour (mph) pedestrian criterion is exceeded under existing conditions. With the project, there would be 26 locations at which the pedestrian criterion would be exceeded. Compared with existing conditions, wind speeds with the project (without other potential development) would decrease at 17 locations, increase at 8 locations, and remain the same at 18 locations. With the project in the potential development scenario (that is, with other potential development in the area), there would be 25 locations where the pedestrian criterion would be exceeded. Existing winds exceed the 26 mph hazard criteria at the sidewalk of the Hayes and Market Streets and Polk and Market Streets intersections for more than one hour per year. In all scenarios tested, winds at these locations would exceed the 26-mph hazard criterion for more than one hour per year. The project would not create any new exceedences of the hazard criterion.

TRANSPORTATION (pp. 119 to 159)

The project would generate about 13,825 net new person-trip ends (pte) per day, 5,575 net new daily pte to and from the New Main Library and 8,250 new daily pte to and from the Asian Art Museum. About 99 percent of the net new library trips and 91 percent of the museum trips would be generated by patrons; employees (including volunteers) would make the remaining trips. In the p.m. peak hour, the project would generate about 1,705 pte: 1,030 pte to and from the New Main Library and 675 pte to and from the Asian Art Museum. With the addition of project-generated traffic to

existing conditions, the p.m. peak-hour level of service (LOS) at three intersections studied would remain the same as at present. The project would worsen conditions at the Larkin / McAllister Streets intersection (LOS B to LOS C), the Larkin / Grove Streets intersection (LOS A to LOS B), the Van Ness Avenue / McAllister Street intersection (LOS C to LOS C/D), and the Hyde / McAllister Streets intersection (LOS A to LOS A/B). Cumulative traffic growth between 1991 and 2000, including project traffic, would change LOS at all intersections studied; all intersections would continue to operate at LOS D or better except the Ninth / Market Streets intersection; it currently operates at LOS E and would deteriorate to LOS F.

The project would represent about 0.2 percent of total outbound regional auto demand on major corridors (bridges and freeways) in the year 2000. This increase in traffic would not be measurable against day-to-day fluctuations in traffic volumes. However, cumulative travel demand is projected to exceed p.m. peak period capacity of some of the freeways serving San Francisco, resulting in shifts in travel modes (from automobiles to public transit and ridesharing).

The project site is well-served by both local and regional transit carriers, including MUNI, BART, SamTrans, and Golden Gate Transit directly, and AC Transit and Caltrain via connecting MUNI lines. The project would generate about 345 outbound trips on MUNI and about 48 outbound BART trips during the p.m. peak hour. Levels of Service (LOS) on MUNI would remain within acceptable ranges with the addition of project-generated trips except within the northwest quadrant, where some overcrowding would occur during the p.m. peak hour, while the project would not noticeably affect BART service. Project transit trips would contribute to an overall increase in cumulative ridership.

Project-generated pedestrian traffic would increase pedestrian congestion in crosswalks adjacent to the project site. Under cumulative conditions in 2000 (including project pedestrian traffic), all crosswalks studied would operate in the unimpeded range in both the noon and p.m. peak hours except the south crosswalk at Hyde and Fulton Streets, which would be in the impeded range in both periods, and the north Hyde / Fulton crosswalk and north Larkin / Grove crosswalk, both of which would be impeded in the noon hour. All crosswalks would operate at acceptable levels of service under both project and cumulative conditions.

The project would eliminate about 220 public parking spaces (about 130 spaces in the Marshall Square lot and about 90 on-street spaces on Fulton Street), as well as 17 spaces currently used by City employees / vehicles. The project would provide no public parking. There would be seven parking spaces for City-owned vehicles (including one staff space) in the New Main Library. Currently, on-street parking in the project vicinity is 85 percent occupied on an average weekday and off-street parking is about 80 percent occupied, with variation among lots and garages. The Civic Center Garage is about 50 percent occupied on an average weekday. Project parking demand, including displaced demand from the approximately 230 total eliminated spaces, would be about 470 spaces on an average weekday and about 525 spaces on a peak non-special-event weekday. This demand, including parking demand from the United Nations Plaza Farmers' Market, could be accommodated in the project area. On weekdays when major special events are under way at Brooks Hall / Civic Auditorium, there would be an unmet parking demand for about 185 spaces. Some Farmers' Market vendors could have difficulty locating nearby parking for their larger vehicles once the Marshall Square lot were eliminated and parking was eliminated on Fulton Street for the mall.

Truck loading for the New Main Library would be by a relocated two-way access ramp from Hyde Street that would also serve Brooks Hall. The existing Brooks Hall ramp would be eliminated. Library loading has been designed to minimize conflicts with Brooks Hall truck traffic. With construction of the Fulton Street Mall, trucks waiting to unload at Brooks Hall would not be able to use Fulton Street as a queuing area, compared with existing conditions. These trucks would be held at a South of Market staging area and dispatched to Brooks Hall to avoid conflicts with traffic around the project site. Nevertheless, because the largest (65-foot) trucks would have to back down the ramp and into the Brooks Hall loading area, the potential would exist for conflicts among Brooks Hall trucks, library delivery vehicles, and traffic on Hyde Street.

AIR QUALITY (pp. 159 to 164)

Project-related vehicular traffic would add to cumulative regional pollutant emissions, and contribute to the continued failure of the Bay Area to attain federal ozone and carbon monoxide (CO) standards. Project-related traffic alone would contribute less

than one percent of transportation-related emissions resulting from development in San Francisco County, and thus would not pose a potentially significant effect on air quality. However, emissions of particulates generated by the project, together with cumulative development, would increase particulate concentrations, which would increase the frequency of fine particulate matter standard (PM_{10}) violations in San Francisco, with concomitant health effects and reduced visibility.

Currently, neither the one- nor the eight-hour CO standards are being violated in the project vicinity at any intersections studied. Neither project-generated nor cumulative vehicle traffic would cause violations at any of the study intersections. Local CO concentrations are predicted to be less in 2000 than in 1990 (the base year for project impacts), because the effects of emission controls on new vehicles would offset increases in traffic volumes and congestion.

CONSTRUCTION NOISE (pp. 164 to 170)

Project construction of the New Main Library and remodeling and expansion of the existing Library building would temporarily increase noise and vibration levels in the vicinity of the site during the 54 months estimated to complete those portions of the project. Highest average construction noise levels experienced in residences or offices and stores (depending on whether pile driving were to occur at night or during daytime hours) near the site could interfere with rest and speech, and could affect users of the existing Main Library. Pile driving would occur intermittently for about four weeks during construction of the New Main Library, and for a shorter period during construction of the addition to the existing library. Pile driving would cause vibrations, which are more irritating to some people than noise, in adjacent and nearby buildings. Pile driving and the operation of construction equipment could temporarily raise the exterior noise level 70 feet from the New Main Library site along Grove Street to about 98 dBA. With windows open, commercial uses along Grove Street would experience interior noise levels of about 88 dBA; with windows closed, approximately 78 dBA. Exterior noise levels at two residential hotels south of the New Library block would be about 89 dBA. With windows open, hotel residents would experience interior noise levels of about 79 dBA and, with windows closed, about 69 dBA. The existing library site on Fulton Street would experience peak

exterior noise levels of about 93 dBA. With windows open, interior noise would be about 83 dBA and with windows closed, about 73 dBA. Noise impacts of remodeling and expanding the existing Main Library building would be less than those of the New Main Library construction because most of the work would be indoors. As noted, pile driving would be required for the addition to the existing building. Should any other buildings be under construction in the project vicinity at the same time as project construction, noise levels would be expected to increase by 2 to 5 dBA.

GEOLOGY AND SEISMICITY (pp. 170 to 175)

The project site, like San Francisco and the Bay Area in general, is subject to ground shaking from potentially large earthquakes on the San Andreas and Hayward faults, as well as on other faults in the region. Increases in employment and public use at the site that would occur as a result of the project would result in a larger number of people being exposed to seismic hazards, compared to existing conditions, if an earthquake occurred during the day. New buildings, including the proposed New Main Library, are subject to more stringent building and structural standards than older buildings. The project also includes seismic upgrading of the existing library building for conversion to the Asian Art Museum, and demolition or removal of two existing office buildings, which probably do not meet current seismic design standards. Persons using the site after the proposed development would likely be relatively safer than those using the site in its present condition in the event of a major earthquake.

HAZARDS (pp. 175 to 177)

The site was used, historically, as open space and burial grounds in the 1800's and City administrative offices in the 1900's. Such activities do not typically involve substantial hazardous material use and do not suggest the potential of subsurface contamination of soil or groundwater. Review of relevant agency files did not reveal any known contamination on the project site. While potentially contaminated groundwater could have migrated onto the site from other properties in the vicinity that contained underground storage tanks, investigation of nearby uses revealed no indication of such occurrences. The possibility exists that polychlorinated biphenyls (PCBs) are present in the buildings on site. Enforcement of legally required provisions to protect worker safety and performing site investigation and site remediation, as appropriate, would protect workers.

C. MITIGATION MEASURES

Primary measures that would mitigate potentially significant environmental effects are presented below. A full recitation of mitigation measures proposed as part of the project (the New Main Library, the Asian Art Museum, and the Fulton Street Mall), under consideration or rejected by the project sponsors, and those under the jurisdiction of other agencies is presented on pp. 179 to 185.

MEASURES PROPOSED AS PART OF THE PROJECT

- The sponsors would retain the services of an archaeologist. The Environmental Review Office (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) an the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

  Given the archival history of the project site, an historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO would also require cooperation of the project sponsors in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

  Should archaeological resources be found following commencement of excavation activities, the archaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Excavation or construction activities which might damage the discovered cultural resources would be suspended for a maximum of four weeks (cumulatively for all instances where the ERO has required a delay in excavation of construction) to permit inspection, recommendation and retrieval, if appropriate. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific actions to protect the resources, if necessary.

  Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed by an appropriate repository as determined by the ERO. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University along with three copies to the ERO.

- The project sponsors would require the contractor(s) to sprinkle demolition sites with water regularly during demolition, excavation and construction; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soils, sand and other material; cover trucks hauling debris, soils, sand or other such material; and sweep surrounding streets during demolition, excavation and construction at least once per day to reduce PM_{10}

emissions. The sponsors would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of PM_{10} and other pollutants, by such means as a prohibition on idling of motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

- As recommended by the Environmental Protection Element of the San Francisco Master Plan, an analysis of noise reduction measures would be prepared by the project sponsors and recommended noise insulation features would be included as part of the proposed buildings. For example, such design features could include fixed windows and climate control.

- The project sponsors would require that the project contractor(s) predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.

- The project sponsors would consult with the Department of Public Works to determine the time when pile driving would cause the least disturbance to neighboring uses. The project sponsors would require that the construction contractor(s) limit pile driving activity to result in least disturbance to people. This could require a work permit from the Director of Public Works pursuant to San Francisco Noise Ordinance Section 2908, if pile driving during nighttime hours were determined to be less disruptive to neighboring uses.

- One or more geotechnical investigations by a California-licensed geotechnical engineer are included as part of the project. The project sponsors and contractor(s) would follow the recommendations of the final geotechnical report(s) regarding any excavation and construction for the project.

- If dewatering were necessary, any groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this were found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.

MEASURE UNDER CONSIDERATION BY THE PROJECT SPONSORS

- During the construction period, construction truck movement could be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic conflicts. The project sponsors and construction contractors could meet with the Traffic Engineering Division of the Department of Parking and Traffic, the Fire Department, MUNI and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects that are planned for construction or which later become known.

MEASURE THAT COULD BE IMPLEMENTED BY OTHER AGENCIES

- Brooks Hall staff could arrange for incoming trucks, making deliveries or pickups, to go first to a staging area. Trucks would be dispatched from the staging area to Brooks Hall when adequate capacity were available within the Brooks Hall loading area to minimize interference with library loading activity and traffic on Hyde Street.

D. ALTERNATIVES TO THE PROPOSED PROJECT

ALTERNATIVE A: NO PROJECT

This alternative would involve no change to the site. The 100 Larkin Street City office building, surface parking lot and Pioneer Monument would remain on Marshall Square, and the Main Library would remain at its existing location; it would be seismically upgraded independently of the project. The New Main Library would not be built on Marshall Square. The Asian Art Museum would not be moved from Golden Gate Park. Fulton Street would not be altered.

Under the No Project Alternative, none of the impacts associated with the project would occur. The environmental characteristics of this alternative would be generally as described in the Environmental Setting chapter of this report. Transportation, noise and air quality impacts resulting from project construction would not occur. Future transportation and air quality conditions would reflect impacts of cumulative development, minus the project. There would be no increase in energy demand or demand for other services on the site. Land uses, site views, shadow and winds would not change. There would be no increase in population or employment on the project site; no new jobs in the Civic Center area and in San Francisco would be created. There would be no effects on architectural resources on the project site, and subsurface cultural resources would not be affected. Removal of asbestos and PCBs, which may be on the site, would not occur. This alternative would not contribute to cumulative impacts on transportation at local intersections or to additional air quality impacts.

This alternative would preserve the opportunity to develop the project site in the future with a larger or smaller development.

ALTERNATIVE B: PIONEER MONUMENT

Alternative B.1 Pioneer Monument Retain in Place

This alternative would retain the Pioneer Monument at its present location on Marshall Square. Under this alternative, a new Main Library would be built on Marshall Square; it would be similar to the project library but with the Hyde / Grove corner redesigned. The New Main Library would include about 379,700 sq. ft., about 17,300 sq. ft. less than under the project, according to the project architect. The proposed work space in various departments would be eliminated. This alternative would include remodeling and expansion of the existing library building to contain the Asian Art Museum and construction of the Fulton Street Mall, as with the project.

Impacts of this alternative would be similar to those of the project, with the primary exception being that the monument would not be moved. Trip generation would be the same because the New Main Library would offer the same services except for the auditorium. Without the auditorium, there could be changes in peaking characteristics of patron trips, particularly in the evening when there would be fewer trips, but this change would not measurably affect levels of service at study intersections in the p.m. peak hour.

Construction- and renovation-related noise and air quality impacts would be nearly identical to those of the project. Impacts related to the density of development would be similar to those of the proposed project, since development on the project site would be nearly identical to that under the project. Because the building footprint and exterior of the New Main Library would be similar to that of the project, effects on shadow, wind, subsurface cultural resources, and biology would be similar to those of the project. Effects on views would be similar, except from Eighth and Market Streets, where the monument would be visible in the foreground of the library. Employment would be nearly identical to that under the proposed project, as would the corresponding exposure to seismic hazards. Energy use, public service demand, and cumulative effects related to transportation, air quality and growth inducement would be similar to those of the project. During construction of the New Main Library, a protective temporary structure could be required for the monument.

The San Francisco Tomorrow organization advocates retention of the Pioneer Monument in place, with several design changes to the new Main Library building. A proposal by San Francisco Tomorrow would include these changes and the same square footage as the project.

Alternative B.2 Pioneer Monument Relocated within Civic Center

The Pioneer Monument would be relocated from Grove and Hyde Streets to a new site in the Civic Center as part of the project. This alternative discusses relocation of the monument, including the five sites proposed for consideration by the San Francisco Arts Commission.

This alternative would relocate the Pioneer Monument within the Civic Center. Five locations are currently under study by the Arts Commission, which has jurisdiction over publicly installed art: the proposed Fulton Street Mall; the Market Street end of United Nations Plaza; Civic Center Plaza, across Grove Street from Civic Auditorium; near the corner of Larkin and Fulton Streets, diagonally across the New Library block from the monument's existing location; and in front of City Hall in place of the reflecting pool.

In each case, relocation of the monument would require that it be dismantled. Each of the five statues atop the five granite columns that make up the sculpture group would be taken off the monument and moved separately. The central column and each of the four surrounding piers would probably be disassembled into the pieces from which they were fabricated. The cost of relocating the Pioneer Monument would rest with the Library Foundation, a private fundraising organization that is raising money for interior furnishings for the New Main Library; the foundation has set aside $750,000 for moving the monument. Actual relocation and associated work would be done by a qualified contractor.

Other than effects on the monument itself and potential associated changes in the library development program, building envelope, and views of the monument, impacts of this alternative would be the same as those of the project plus site-specific impacts of monument relocation.

According to a preliminary feasibility study, at each location except the Fulton Street Mall, structural underpinning would be required to support the monument, which is estimated to weigh 560 tons. The U.N. Plaza location is atop Civic Center BART station. Relocation to this location may not be feasible because of the cost of strengthening the station's walls and roof without disturbing MUNI Metro and BART service. The two Civic Center Plaza locations are atop Brooks Hall and the Civic Center Garage, and the Larkin Street / Fulton Street location would be above the New Main Library's loading area; all of these would require strengthening. Were the Civic Center Garage to be expanded beneath Fulton Street (see Alternative F, p. 207), the Fulton Street Mall location would also require support. Relocation to all sites except the Larkin Street / Fulton Street site and the Fulton Street Mall could occur earlier than the others, without necessitating the Pioneer Monument be stored or temporarily relocated elsewhere; at those two locations, construction of the library loading area would have to occur first.

Alternative B.3 Temporary Storage of Pioneer Monument

This alternative would remove and place the Pioneer Monument in storage, until a new site for the monument were selected and prepared. Temporary storage of the monument would require that it be dismantled (as discussed in Alternative B.2 above). The cost of relocating the Pioneer Monument to a storage facility, and of relocating the monument from a secured and enclosed City-owned storage facility to the selected site, would be the responsibility of the Library Foundation.

Historic, Architectural and Cultural impacts of removing an historic structure from public view for some period of time would be the impact of this alternative.

ALTERNATIVE C: ALTERNATIVE SITE

Under this alternative, a new Main Library would be constructed at an alternative site, within the Yerba Buena Center (YBC) redevelopment area located south of Market Street. Marshall Square would remain in its existing condition, with the 100 Larkin Street City office building, surface parking lot, and Pioneer Monument remaining in their current locations. The Fulton Street Mall might or might not be constructed

under this alternative, as with the project. The Asian Art Museum would be relocated to the existing Main Library building, as with the project. The New Main Library, however, would be constructed in Yerba Buena Center in the area bounded by Mission, Howard, Third and Fourth Streets or Mission, Howard, Third and New Montgomery Streets. Under this alternative, the New Main Library would be approximately the same size as the library planned for the proposed project, although it would likely differ in layout and exterior design and could be combined with other planned development in YBC. Library uses would be the same as those proposed in the project.

This alternative would shift some localized impacts related to the project, including transportation, air quality, noise, and population. Although the intensity of project-related development in the Downtown & Vicinity would be similar under this alternative to that under the project, some of the impacts would occur at part of the proposed project site and some, at the alternative site. Cumulative transportation and air quality impacts and energy use would be the same measured against overall development in the Downtown & Vicinity analyzed in the Mission Bay Final EIR.

Effects related to transportation, construction air quality, construction noise, localized operational air quality, and population at the Civic Center would be less than under the project, because the new Main Library would not be constructed there. The construction period would be shorter, resulting in fewer construction-related air quality and noise impacts. Visual impacts in the Civic Center would differ from those under the project because the New Main Library would not be built on the proposed project site, while visual impacts downtown would be expected to be similar to those of the cultural facilities proposed for Yerba Buena Center. Impacts on Civic Center architectural resources would be similar for the remodeling and expansion of the existing library, but the Pioneer Monument would not be affected by this alternative. The potential to disturb subsurface cultural resources at the Civic Center would be less since there would be no construction on Marshall Square. This alternative would add no new shadow to Civic Center Plaza, United Nations Plaza, or the proposed Fulton Street Mall compared to the project, but would add shadow to the plaza in front of Hastings College of the Law, as under the project. Winds would be similar to those under existing conditions. This alternative would not result in the removal of lawn and trees from Marshall Square.

Trip generation for the New Main Library at Yerba Buena Center would be similar to that for the new library at Civic Center under the project, but all library trips would be new trips at the alternative site. Effects related to the intensity of development, including transportation, air quality, noise, and population, would be similar to those of construction of a new Main Library at Marshall Square, but would occur at the alternative site instead. The library construction period would be shorter than for the project as a whole, although it could be somewhat longer than the 30 months anticipated for the library if the off-site library were integrated with other planned development at Yerba Buena Center. If so, construction-related air quality and noise impacts would be somewhat greater than for the library alone at Marshall Square. Construction impacts would be comparable to those for the currently planned development under the YBC Subsequent EIR. Effects on views, shadow and wind, subsurface cultural resources, and biology, and potential effects from hazardous materials on-site would be similar in overall impact to those anticipated from planned development at YBC. Impacts on shadow, wind, and views could be less than presently anticipated for Yerba Buena Center if the library were to replace a larger planned structure in the YBC development program.

ALTERNATIVE D: EXPANSION AND REUSE OF EXISTING LIBRARY

Under this alternative, the existing library building would be remodeled and expanded into the 45 Hyde Street space to accommodate the space needs of the Main Library. Marshall Square would remain in its existing condition, with the 100 Larkin Street City office building, surface parking lot, and Pioneer Monument remaining in their current locations. The Asian Art Museum would not be relocated from Golden Gate Park. The Fulton Street Mall might or might not be constructed.

Transportation, air quality, noise, energy, subsurface cultural resources, biology, architectural and cultural resources, and population effects would be less than under the proposed project because, while the Main Library would be remodeled and expanded at its present location, no construction would occur on Marshall Square. The construction period would be shorter, reducing construction-related air quality and noise impacts. Traffic and air quality effects on Civic Center intersections would be less than under the project. Visual impacts would be different than those under the project because a new library building would not be constructed on Marshall Square.

The Pioneer Monument would not be affected by this alternative, nor would landscaping on Marshall Square. This alternative would add no new shadow to Civic Center Plaza, United Nations Plaza, or the proposed Fulton Street Mall; it would add shadow to the plaza in front of Hastings College of the Law in a manner similar to the project. Winds would be similar to those under existing conditions.

Impacts related to seismicity would be less than those of the project because the existing library would be seismically upgraded, as with the project, and 45 Hyde Street would be replaced with a new structure; However, fewer people would be on the proposed project site during the day and this alternative would result in the retention of the 100 Larkin Street building, which was constructed prior to the enactment of current earthquake codes. Impacts related to hazardous materials would be similar to those under the project for renovation and expansion of the existing library building and demolition of 45 Hyde Street.

ALTERNATIVE E: EXISTING LIBRARY AS COURTS FACILITY

Under this alternative, the New Main Library would be constructed as proposed. The existing Main Library building would be remodeled and converted to a courts building. The Asian Art Museum would not be relocated from Golden Gate Park. The Fulton Street Mall would be constructed between the New Main Library and the newly remodeled courts building. This alternative would relocate the Civil Division of the Superior Court from City Hall to the existing library building.

Assuming that vacated courtroom and associated space at City Hall would be backfilled by City offices, this alternative would generate approximately 43 percent more daily person-trip-ends (pte) than would the project. Trip generation in the p.m. peak hour would be about ten percent greater than under the project. Air quality impacts would be correspondingly greater. Effects on architectural resources and visual impacts would depend on the nature of the remodeling of the existing library building.

Effects related to shadow and wind, subsurface cultural resources, hazards, biology, and seismicity would be similar to those of the proposed project because the intensity, size and location of development would be similar to that under the project. The length of construction would be similar, meaning construction-related air quality and

noise impacts would be similar. Cumulative transportation and air quality impacts, and impacts related to growth inducement could be greater to those of the project, due to new activities occupying space vacated by the Courts, unless these were existing activities moving to less crowded quarters. Energy use would be similar to, although somewhat less than, that for the project.

ALTERNATIVE F: PROJECT WITH CIVIC CENTER GARAGE EXPANSION

This alternative would be the same development program analyzed as the project except that, in addition, the existing Civic Center Garage beneath Civic Center Plaza would be expanded in or near the area beneath the proposed Fulton Street Mall, by about 570 spaces to a total of about 1,410 spaces.

With the exception of parking and construction impacts, effects of this alternative would be virtually identical to those of the proposed project. This alternative would result in a lengthened construction timetable. The construction of the Fulton Street Mall would be phased after completion of the expansion of the Civic Center Garage. Construction noise and air quality impacts would be greater than those of the proposed project. Parking demand would remain the same as under the project, but this alternative would provide enough additional parking spaces to satisfy weekday demand during a major special event, as compared to the project, under which there would be an approximately 185-space deficit on peak special-event weekdays. Accommodation of this demand could incrementally increase traffic and parking demand if more motorists were assured of parking.

Under cumulative conditions, there would continue to be a shortage of parking on peak special-event weekdays even with the garage expansion. This unmet demand would be approximately 85 to 160 spaces, compared to an unmet demand of about 655 spaces to 730 spaces with the project.

Further soils analysis would be required prior to construction of the proposed garage expansion. There would be somewhat greater potential than under the project to discover subsurface cultural resources, since the area of excavation would be greater.

Visual, architectural, wind, shadow, employment and population, energy, biology, and hazardous materials effects would be similar to those of the proposed project because

the intensity, size and location of development would be similar to that of the proposed project. Cumulative effects related to transportation, air quality and growth inducement would be similar to those of the project.

ISSUES TO BE RESOLVED

Several areas of controversy, and/or potential issues to be resolved, have emerged during planning and public information forums for the New Main Library. These include concern about relocation of the Pioneer Monument, by those who feel it should remain in place; concern about retention of the monument, which is offensive to some groups; loss of parking; and building design; as well as advocacy for implementation of the new library as soon as possible to avoid program cuts.

II. PROJECT DESCRIPTION

A. PROJECT SPONSORS' OBJECTIVES

The San Francisco Library Commission proposes to build a new Main Library on Marshall Square in the San Francisco Civic Center, with funding from a bond measure approved by the City's voters in November 1988 for this purpose. The Library Commission has five goals for construction of the New Main Library: the creation of a library that will serve the needs of a diverse population ranging from scholars to the children of the Tenderloin district, for whom the Main Library is the local branch, as well as San Francisco's many ethnic and other groups; the construction of a great building, both outside and in, that will complete the Civic Center as it was envisioned in 1912 while serving the needs of library users; the creation of an anchor for an improved library system; the completion of the project on schedule and within the budget; and the launching of a proposed series of Civic Center improvement projects, including the reuse of the existing library as the Asian Art Museum and the construction of the Fulton Street Mall (both analyzed in this EIR), as well as the renovation of Civic Center Plaza, including a return to the original 1912 design. (See discussion of Civic Center projects in Chapter III.A. Land Use.)

The Asian Art Commission seeks to expand the space available to display and care for the museum's permanent collection, as well as to develop gallery space for temporary exhibits, which currently require the temporary removal of material from the permanent collection. This Commission also seeks to relocate to the existing main library building to create a separate identity for the Asian Art Museum, currently located within the M.H. deYoung Museum building in Golden Gate Park. This portion of the project would be carried out by the Asian Art Commission with separate funding. Assuming separate funding becomes available, the San Francisco Department of Public Works plans to construct a pedestrian mall in the block of Fulton Street between the existing Main Library and the new library to create a continuous pedestrian space between City Hall and Market Street.

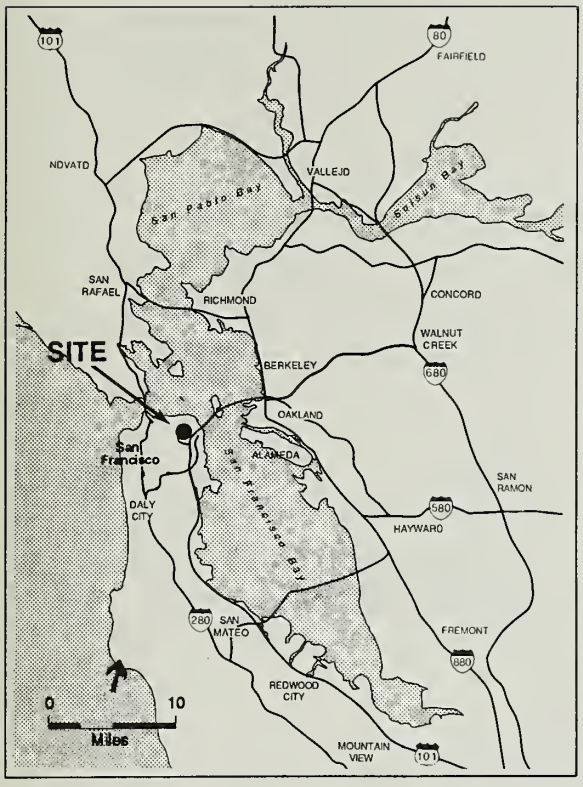
The architects for the New Main Library are Pei Cobb Freed & Partners of New York and Simon Martin-Vegue Winkelstein Moris of San Francisco, associated architects. No architecture or design teams have been selected for the other two components of the project.

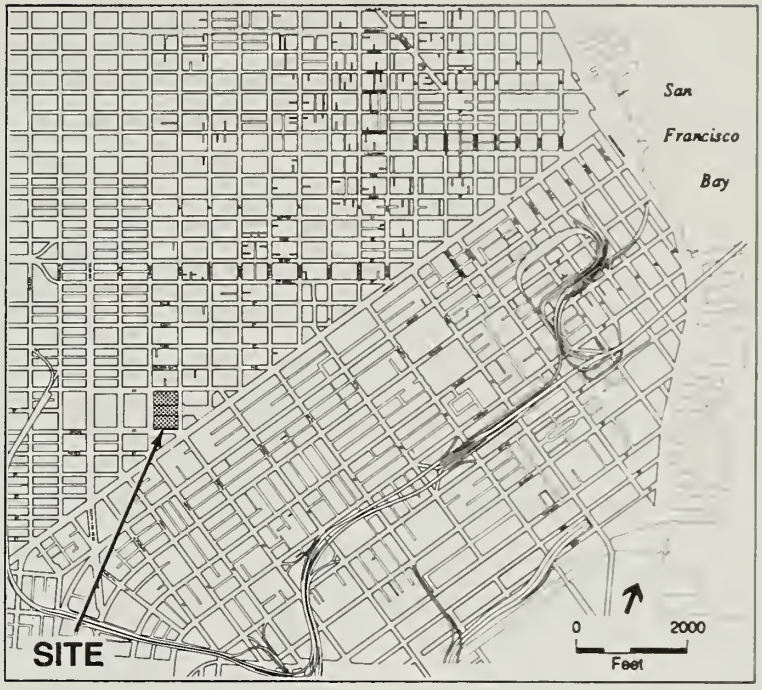
B. PROJECT LOCATION

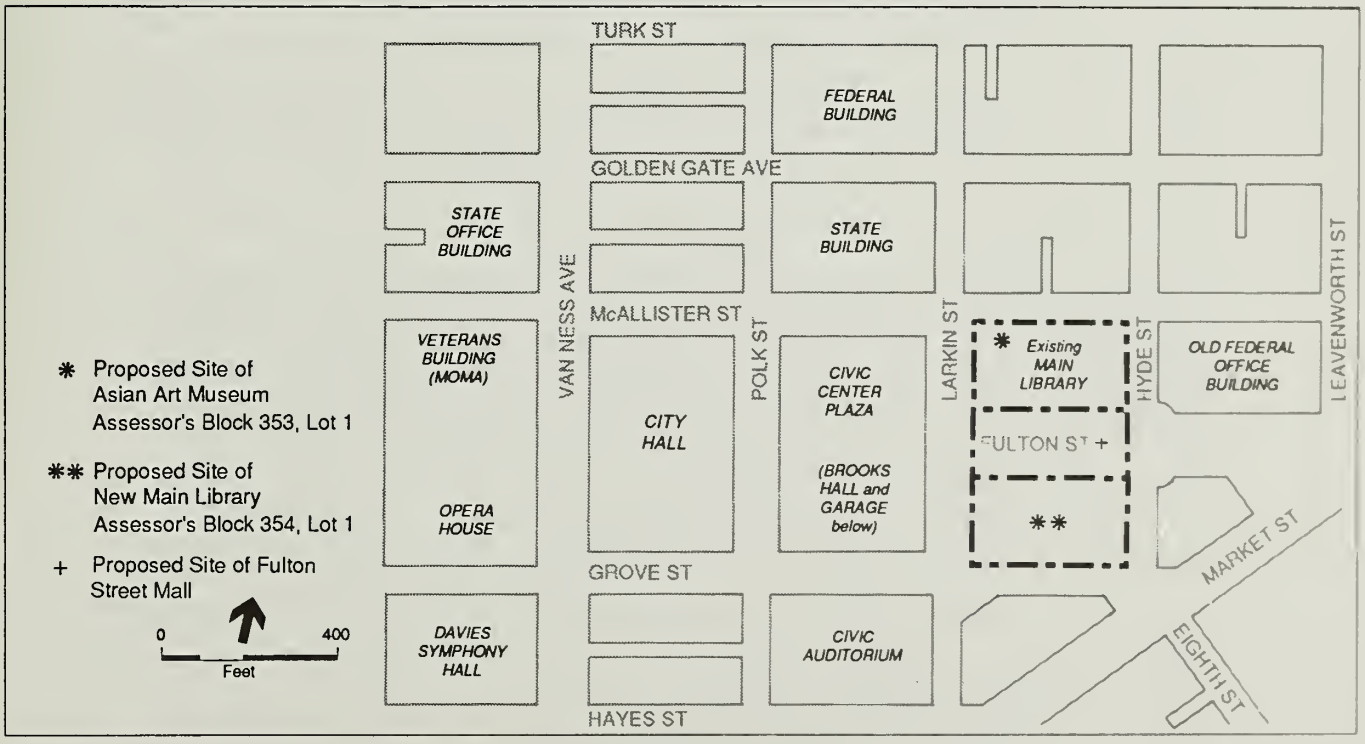
The project would be located on two full blocks and the street between them in the San Francisco Civic Center, directly to the east of Civic Center Plaza (see Figure 1). The 243,000-sq.-ft. project site includes Lot 1 in Assessor's Block 353, Lot 1 in Assessor's Block 354, and the portion of Fulton Street between these two blocks. The site is bounded by Larkin, McAllister, Hyde, and Grove Streets. The New Library block, or Marshall Square, is bounded by Fulton, Hyde, Grove, and Larkin Streets (Assessor's Block 354, Lot 1). This block contains a 7,950-sq.-ft., single-story City office building surrounded by landscaping at 100 Larkin Street; a 38,350-sq.-ft., 130-space surface parking lot; about 30,000 sq. ft. of lawn and 77 trees; a ramp to Brooks Hall; paved walkways; and the Pioneer Monument sculpture group at the corner of Hyde and Grove Streets. The Asian Art Museum block is the block directly north, bounded by McAllister, Hyde, Fulton, and Larkin Streets (Assessor's Block 353, Lot 1). This block contains the existing 175,000-sq.-ft., three-story San Francisco Main Library, a 45,000-sq.-ft., three-story City office building at 45 Hyde Street, and a seven-space parking non-public lot between the two buildings, as well as five non-public spaces in the library basement. The 45 Hyde Street building is used in part for auxiliary office space for the existing Main Library and also contains other City offices. Fulton Street between Larkin and Hyde Streets is a two-way through street with about 90 on-street parking spaces. The project site is in a P (Public Use) zoning district. The New Library block and the Asian Art Museum block are both within an 80-X Height and Bulk District. The Fulton Street Mall site is within an OS (Open Space) Height and Bulk district.

C. PROJECT CHARACTERISTICS

The project examined in this EIR consists of three components: the new San Francisco Main Library, conversion of the existing San Francisco Main Library to the Asian Art Museum, and construction of the Fulton Street Mall. While the library project is formally proposed for development, the museum and pedestrian mall







SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure 1
Project Location

components are in preliminary stages. Because the three components are adjacent to one another, and because they could occur in succession, they are analyzed herein as one project. Neither the construction of the Fulton Street Mall, a potential City-sponsored project, nor the renovation of the existing library building to accommodate the Asian Art Museum, with funding to be determined is certain to occur. For purposes of analysis in this EIR, these two projects are treated as part of the overall project. Another museum or similar culturally oriented use in the existing library building likely would have similar characteristics to those analyzed for the potential relocation of the Asian Art Museum.

Project characteristics are summarized in Table 1. Figures 2, 3, 4 and 5 (pp. 30, 31, 32, and 33) show elevations of the Larkin Street (west), Fulton Street (north), Grove Street (south), and Hyde Street (east) facades of the proposed New Main Library.

MARSHALL SQUARE / NEW LIBRARY BLOCK

The proposed New Main Library would be a six-story-plus-basement building containing about 397,000 sq. ft. The building would range from about 75 feet to about 85 feet in height at the roof cornice along Larkin and Fulton Streets and most of the Grove Street frontage, with the variation due to the northwest-to-southeast downward grade of the site; a tower near the southeast corner would rise approximately 15 feet above the cornice line. The Hyde Street side of the building would have a façade parallel to the street about 40 feet tall and an offset rectangular element about 85 feet tall, with a vaulted roof rising to approximately 93 feet near the center of this side. Skylights in the form of an L-shaped channel parallel to Larkin and Fulton Streets would be about seven feet taller than the cornice, while two corners of a rectangular skylight at the center of the roof would be up to 12 feet taller than the roof cornice (these would not be visible from the street).

The New Main Library would be set back from the property line approximately 40 feet along the west (Larkin Street) and north (Fulton Street) frontages in a manner similar to the existing library building, with a pedestrian walkway on most of the Fulton Street side of the building, beginning at the Larkin Street sidewalk and rising to about 3.5 feet above existing grade at the east end of the building. A granite-faced concrete podium (similar to that in front of the existing library), about 1.5 feet above grade, would extend along the Larkin Street side of the building, with landscaped areas at the

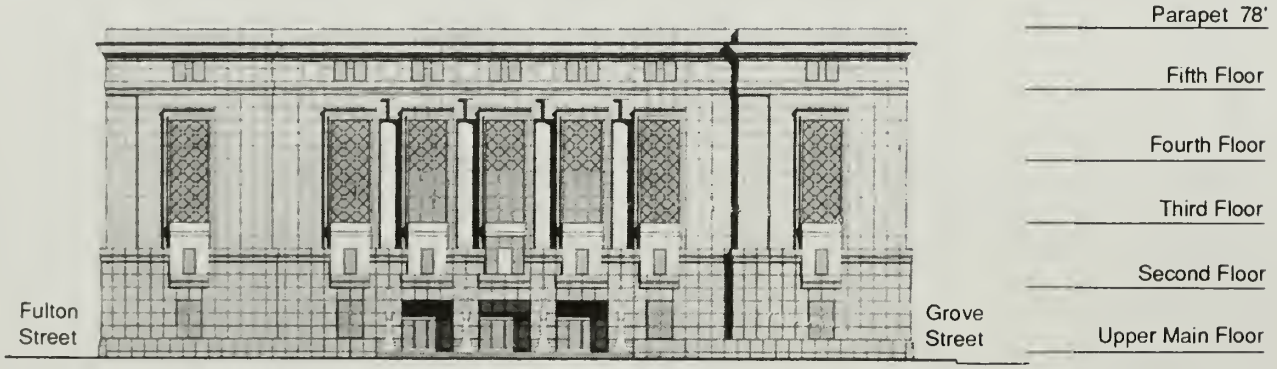
TABLE 1: PROJECT CHARACTERISTICS

PROPOSED USES	FLOOR AREA (sq. ft.)/a/ New Main Library	Asian Art Museum/b/	Fulton Street Mall/c/	Total Project Area (sq. ft.)
Loading	21,500	3,750	0	25,250
Library	367,100	0	0	367,100
Museum	0	202,850	0	202,850
Auditorium/d/	5,800	10,000	0	15,800
Retail/e/	800	4,500	0	5,300
Cafe	1,800	2,900	0	4,700
TOTAL	397,000	224,000	0	621,000
Open Space/f/	27,000	22,500	63,000	112,500

	New Main Library	Asian Art Museum	Fulton Mall
Height (approx. feet)	80	80	N/A
Stories	6 + 1 bsmnt	4 + 1 bsmnt (2 stories in 45 Hyde addition)	N/A
Parking Spaces/g/	7	N/A	0
Loading Spaces	One two-bay dock plus one van space	One loading dock	0

/a/ Floor area figures indicate total floor area, including mechanical and storage spaces.
/b/ William Turnbull Associates, April 1988, Asian Art Museum - Main Public Library Building: A Feasibility Study. Figures are preliminary estimates and should not be considered an adopted building program. Figures for individual spaces computed by dividing net area by net-to-gross ratio of 0.72. Museum space includes galleries; other public areas; classrooms; offices and staff areas; storage, conservation and preparation space; and mechanical space.
/c/ Area for Fulton Street Mall based on total square footage of street right-of-way. The mall could be larger, including landscaped areas (open space) on south side of existing Main Library (future Asian Art Museum) and on north side of proposed New Main Library.
/d/ Auditorium figure includes meeting rooms.
/e/ Retail space consists of gift shops.
/f/ Open space for New Main Library and Asian Art Museum includes landscaped setbacks surrounding buildings, as well as upper floor terraces in New Main Library.
/g/ Parking spaces would be for library service vehicles and vendors; one space would be available for library staff (City Librarian).

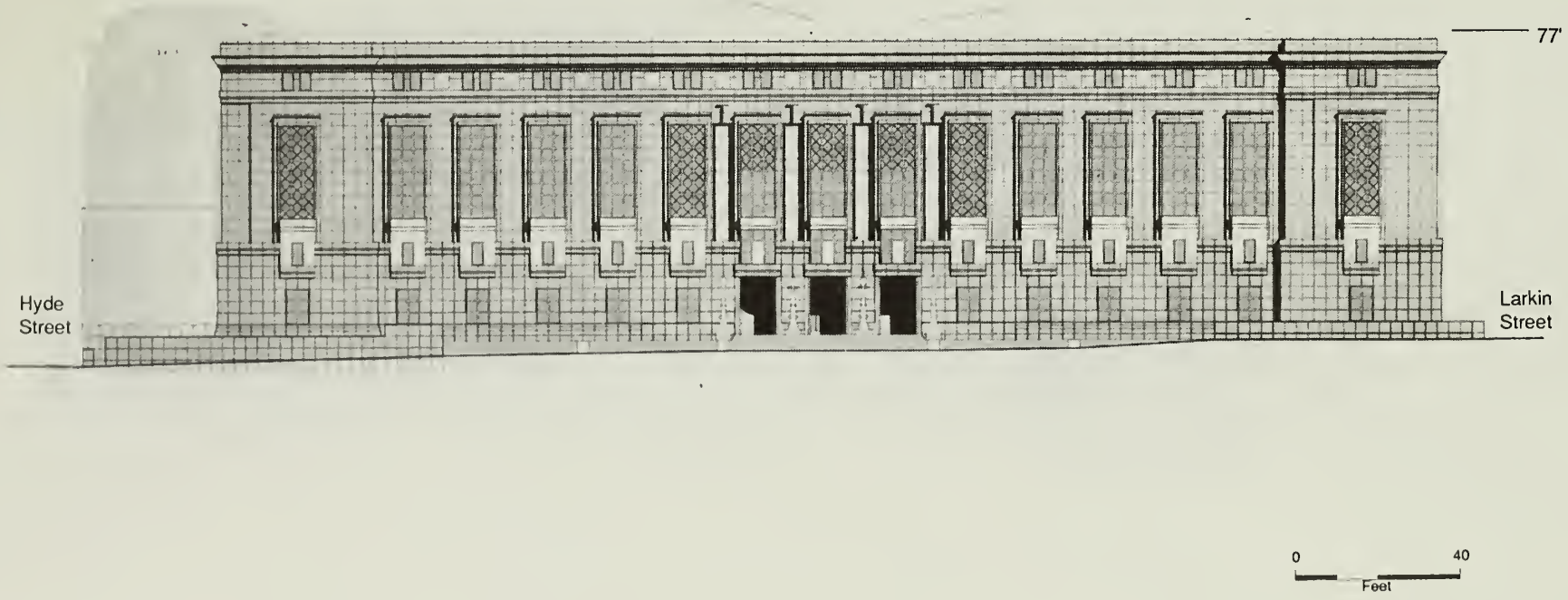
SOURCE: Environmental Science Associates, Inc., Pei Cobb Freed & Partners, Simon Martin-Vegue Winkelstein Moris, William Turnbull Associates



NOTE: Main Floor is partially below grade.
Direct entrance to the Main Floor is on Grove Street.

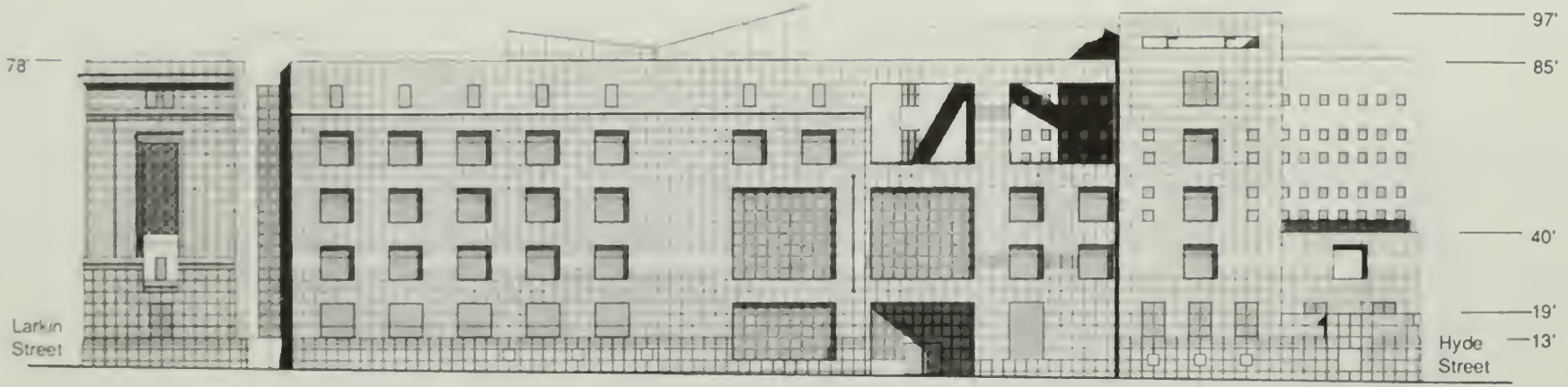
SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

Figure 2
Larkin Street (West) Elevation



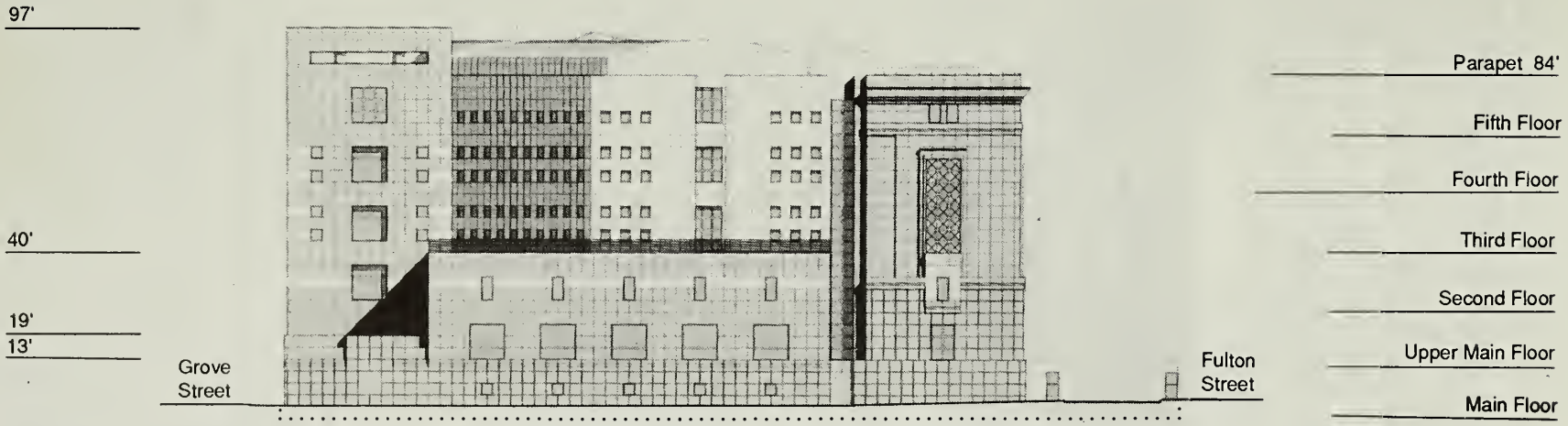
SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

Figure 3
Fulton Street (North) Elevation



SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

Figure 4
Grove Street (South) Elevation



Note: Main Floor is partially below grade.

SOURCE: Associated Achitects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Mons

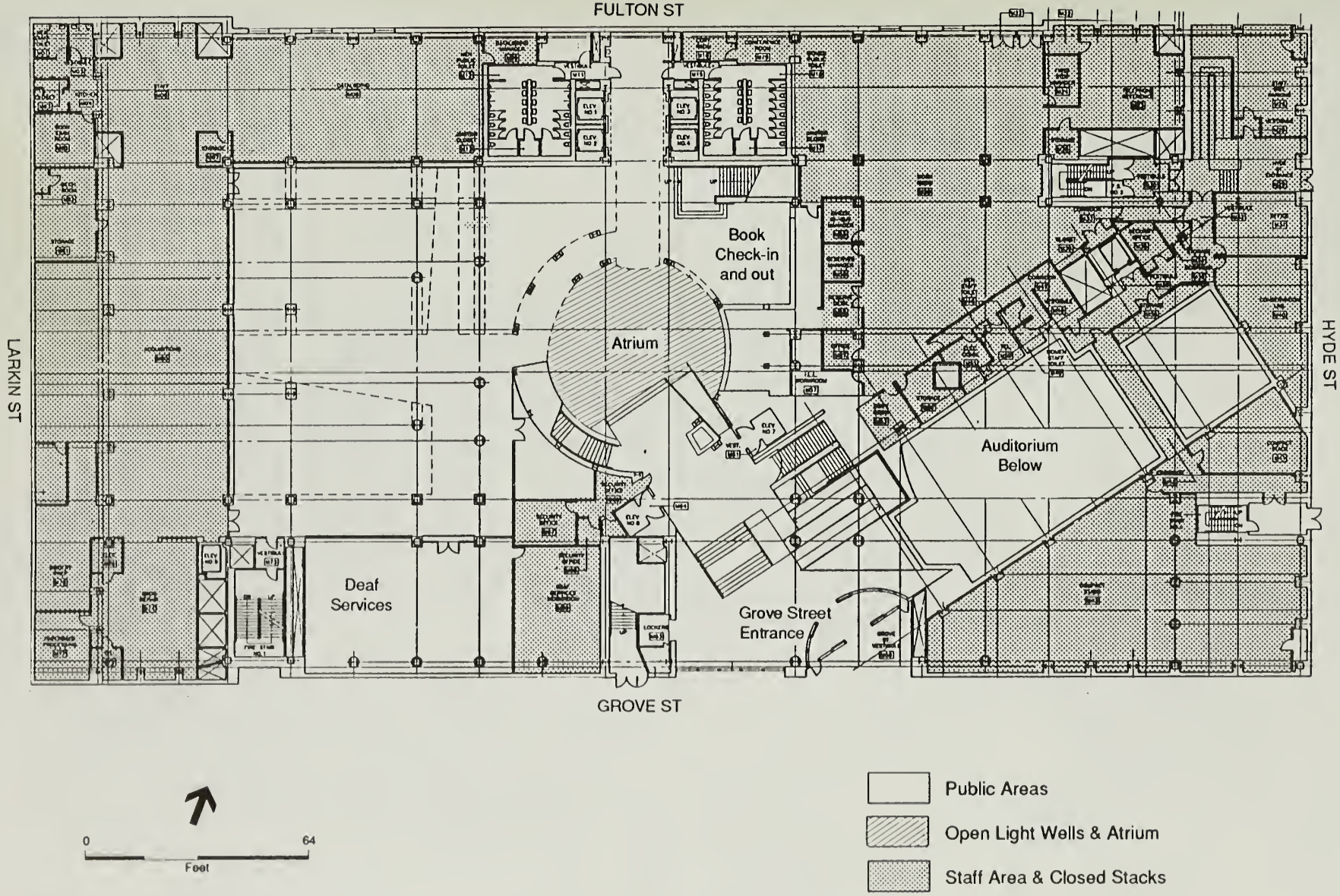
Figure 5
Hyde Street (East) Elevation

north and south corners. At the Grove / Hyde Streets corner, a corner cutout about 35 feet square would begin about 10 feet above sidewalk level. The existing Pioneer Monument at the southeast corner of the New Library block would be relocated to another site in the Civic Center (see discussion in Section III.B. and IV.A., Historic and Cultural Resources, pp. 52 - 68 and 81 - 86, and Chapter VII. Alternatives, pp. 187 - 209) to allow the new library to extend to the property line along Hyde and Grove Streets. The new library would cover approximately 65 percent of the 90,000-sq.-ft. New Library block.

The north and west facades of the New Main Library would be similar in architectural style to the existing Beaux Arts library, while the east facade and most of the south side of the new library would be of a more contemporary design. Further discussion of the architectural characteristics of the proposed New Main Library is provided in Section IV.B. Urban Design and Visual Quality, pp. 87 - 101.

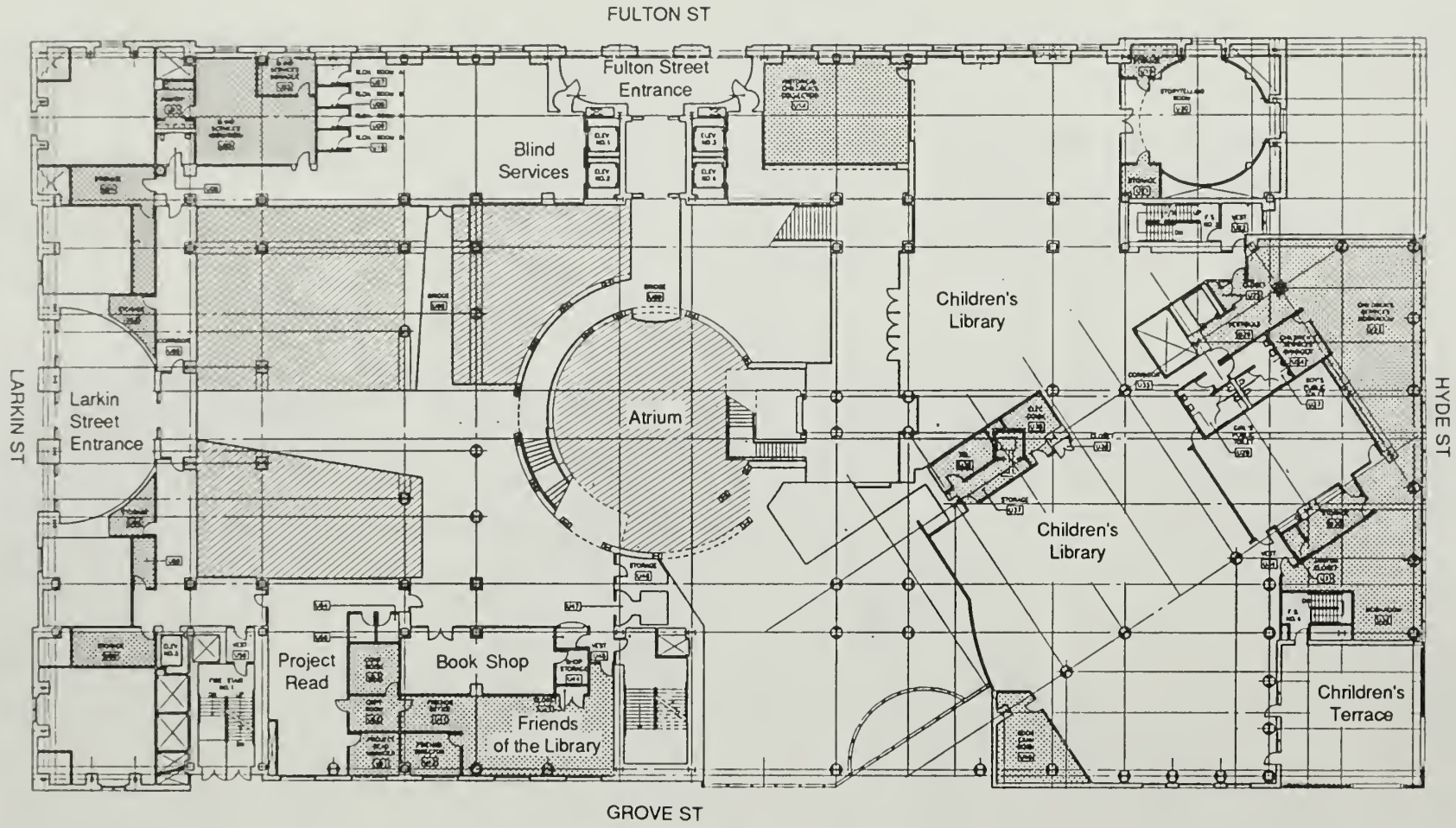
Building entrances would be located on the Larkin, Fulton, and Grove Street sides, with a staff entrance on Hyde Street. The Larkin Street entrance would be the formal entrance, corresponding to the main entrance of the existing library building. The secondary formal entrance would be on Fulton Street. The Grove Street entrance is expected to be the most heavily used. It would be possible to walk through the building between any two entrances without entering secured library use areas. Vehicle access for loading and City vehicle parking would be from a ramp on Hyde Street. A curbside book drop would be located on Larkin Street near Fulton Street, in front of the building. Public bicycle parking would be provided, possibly on the Grove Street side of the building inside a room adjacent to the entry foyer, with staff bicycle parking inside the staff entrance.

The Main Floor and Upper Main Floor of the New Main Library would be connected by a circular stair curving around a central atrium, and would be the areas within the library most open to the public. The Main Floor (see Figure 6), with about 59,000 sq. ft., would be directly accessible from Grove Street and would include book checkout and return desks, the so-called first-stop reference area, newspaper-reading facilities, services for the hearing impaired, and staff work areas. This level would serve as the point of entry for all library services, with a single controlled-access entry / exit. The Upper Main Floor (see Figure 7, p. 36), with approximately 41,000 sq. ft. of public space and staff offices, would include entrances from both Fulton and Larkin Streets. The Children's Library, Library for the Blind, Project



SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

Figure 6
Main Floor Plan



SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

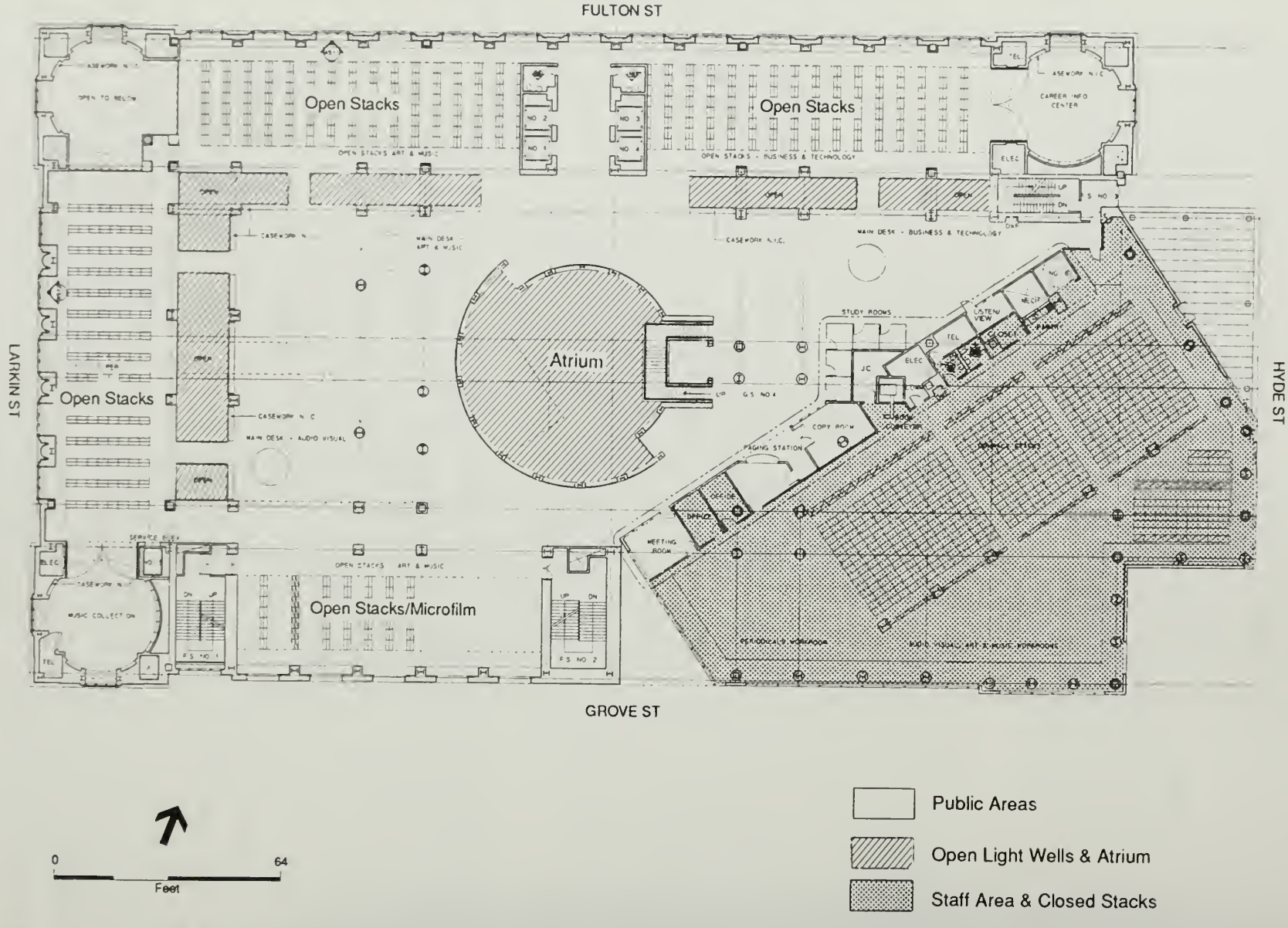
Figure 7
Upper Main Level Floor Plan

Read, Friends of the Library offices, and a gift shop would be located on this level. An outdoor children's terrace would be located at the southeast corner of the building, accessed from the Children's Library.

The central atrium would extend from the Main Floor to the roof, with a skylight above; a staircase projecting into the atrium would extend from the Upper Main Floor to the fourth floor. A bank of four elevators would be located just inside at Fulton Street on the Main Floor and additional handicap elevators would travel between the Main, Upper Main, and basement levels.

Floors two through four would include open and closed book stacks, reference materials, periodicals and microfilm, government documents, special collections, meeting and study rooms, service desks and workrooms. Computer catalog terminals would be located throughout the building. On these three floors, as well as the mostly administrative fifth floor, there would be L-shaped light wells paralleling Fulton and Larkin Streets. Bridges crossing the light wells would connect the library's central spaces to stack spaces parallel to Fulton and Larkin Streets. Floors two through four would contain about 53,500 sq. ft., 55,000 sq. ft. and 51,000 sq. ft., respectively. Figure 8 illustrates a typical upper level floor plan. In addition to administrative offices, floor five, totaling about 47,500 sq. ft., would contain the San Francisco History Room, rare books, a computer facility, book stacks, a roof garden, and a staff lounge.

The basement level of the building would contain approximately 89,500 sq. ft. of indoor space, including a covered loading area, a 299-seat auditorium (analyzed as 300 seats for purposes of environmental review), meeting rooms seating another 250 persons, closed book stacks, a cafe, a gallery to display traveling and in-house exhibits, storage, and support and mechanical facilities. The loading area would include a two-bay loading dock capable of accommodating one 55-foot trailer truck, one van loading space, seven parking spaces for City-owned vehicles and the City Librarian, parking for the library bookmobile, and space for a second bookmobile. Vehicle access to this level would be through a rebuilt ramp from Hyde Street that would also replace and serve as the truck entrance to Brooks Hall beneath Civic Center Plaza. The 23-foot-wide ramp would be similar to but wider than the existing ramp leading to Brooks Hall. Pedestrian entry to Brooks Hall, currently via a walkway alongside the truck ramp, would be through new access at Civic Auditorium to be built



SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

Figure 8
Third Floor Plan

concurrently, while two new Brooks Hall exit stairways would be constructed underground south and east of the Brooks Hall loading dock. These stairways would emerge just west of the New Main Library on the east side of Larkin Street.

Excavation would be required for the New Main Library, with a maximum depth of excavation of about 35 feet below grade.

ASIAN ART MUSEUM BLOCK

The project as analyzed in this EIR also includes separate conversion of the existing Main Library building to house the Asian Art Museum, which now occupies one wing of the M.H. deYoung Museum building in Golden Gate Park. This conversion would be funded from sources to be determined and carried out by the Asian Art Commission, which operates the museum; the seismic upgrade of the building would be funded by seismic improvement bond funds./1/

The Asian Art Museum would occupy the entire existing library building. Included in proposed conversion would be seismic strengthening, the addition of floor space (replacing the existing library stacks with gallery, office and work space, and installing a new mezzanine level in the stack area), and demolishing the City office building at 45 Hyde Street and replacing it with an addition to the existing library building. With this addition, the building would expand from approximately 174,000 sq. ft. to about 224,000 sq. ft. The new museum would include an auditorium/theater seating approximately 400 people./2,3/

Exterior alterations to the building as currently envisioned would include removing the library name and inscription above the Larkin Street entrance and removing inscribed references to literary figures. Cement statues above the Larkin Street doorway would be removed. Two new doorways would replace the existing single entrance on the Fulton Street side of the building, and windows at the ground level along Fulton Street would be extended downward to increase interior light./2,4/

An alternative design for the Asian Art Museum would not include construction of the addition at 45 Hyde Street. Under this plan, additional gallery space would be created

in the south (Fulton Street) reading room and in a partial mezzanine constructed within this room. Exterior alterations to the existing building would be the same under this plan. Although no formal design work has been completed, the proposed addition at 45 Hyde Street is examined in this EIR for purposes of a conservative analysis of exterior architectural, cultural, transportation, shadow, wind, and construction noise impacts, and interior impacts.

FULTON STREET MALL

This EIR analyzes construction of the Fulton Street Mall, a proposed pedestrian mall on Fulton Street between the existing Library and the proposed New Main Library, between Larkin and Hyde Streets. The Fulton Street Mall would connect Civic Center Plaza, between Polk and Larkin Streets, west of the site, with United Nations Plaza, between Hyde and Market Streets, to the east. The mall is one of the sites under consideration for relocation of the Pioneer Monument. The mall would provide a continuous pedestrian space between City Hall and Market Street. The existing approximately 90 parking spaces on Fulton Street would be eliminated.

Fulton Street would be used as a construction staging area for the New Main Library and the Asian Art Museum conversion. Contingent on approval of a future bond issue, the Department of Public Works would complete the pedestrian mall following these two phases of the project. The street would be closed once construction of the New Main Library began.

NET CHANGES

Total net changes in area for the project site would be: an increase in building area of approximately 400,000 sq. ft., including: New Main Library (397,000 sq. ft.), remodeling and expansion of the existing library building (50,000 sq. ft. addition), demolition of 45 Hyde Street (45,000 sq. ft. of office space), and demolition of 100 Larkin Street (7,950 sq. ft. of office space). There would be a decrease in publicly accessible parking spaces of about 220 (130 in the Marshall Square lot and 90 on Fulton Street); in employee parking spaces of about 16 (5 spaces at 100 Larkin Street and 12 at the existing library, less one space to be provided); and an increase of seven

parking spaces for City vehicles and two loading spaces (three at New Main Library and one at Museum, less two at existing library). There would be an increase in open space of about 60,000 sq. ft., including construction of the Fulton Street Mall (about 63,000 sq. ft. for the mall, about 27,000 sq. ft. at the new Main Library, less 30,000 sq. ft. surrounding 100 Larkin Street).

The project would eliminate about 77 trees on the New Library block. The existing ramp to Brooks Hall would be replaced by a new, wider ramp.

Job loss associated with demolition would include two parking lot attendants. Employees (non-library City workers) at 45 Hyde Street would be relocated. The project proposes to move the Pioneer Monument, from the southeast corner of the New Library block to another Civic Center location, thus allowing the New Main Library to occupy the southeast corner of the block and construct a basement auditorium.

D. PROJECT SCHEDULE, COST AND APPROVAL REQUIREMENTS

PROJECT SCHEDULE AND COST

Construction of the New Main Library is expected to take about 30 months and cost approximately $77 million (1990 dollars), with about nine additional months projected for furnishing and transfer of library facilities. A six-month 'early excavation' period is planned for 1992 to uncover potential subsurface cultural resources on-site. With a projected January 1993 start date for construction, the project sponsor expects the new building to be ready for occupancy by September 1995 and open to the public in March 1996. Relocation of the Pioneer Monument could take two to four months after dismantling, or longer if the monument were to be stored pending site selection and development.

Remodeling the existing Main Library building to accommodate the Asian Art Museum would probably begin after completion of the New Main Library and relocation of all library services to the new building. The museum portion of the project is expected to take a minimum of two years and cost approximately $55 million (1990 dollars). Occupancy by the museum is proposed for late 1998. Construction budget and schedule of the proposed Fulton Street Mall have not yet been formally defined. If approved the mall would be expected to be completed by 2000.

APPROVAL REQUIREMENTS

Following a public hearing before the City Planning Commission on the Draft EIR, responses to written and oral comments will be prepared. The EIR will be revised as appropriate and presented to the City Planning Commission for certification as to accuracy, objectivity and completeness. No permits may be issued before the Final EIR is certified.

On November 4, 1986, the voters of San Francisco approved Proposition M, the Accountable Planning Initiative. The measure established eight Priority Policies. These policies are: preservation and enhancement of neighborhood-serving retail uses; protection of neighborhood character; preservation and enhancement of affordable housing; discouragement of commuter automobiles; protection of industrial and service land uses from commercial office development and enhancement of residential employment and business ownership; earthquake preparedness; landmark and historic building preservation; and protection of open space. Prior to issuing a permit for any project that requires an Initial Study under CEQA or adopting any zoning ordinance or development agreement, the City is required to find that the proposed project or legislation is consistent with the Priority Policies. The City Planning Commission, in reviewing the encroachment permit application for the library for conformity with the Master Plan, and the Zoning Administrator, in the Variance decisions, will make a determination of the project's conformance with the Priority Policies (City Planning Code Section 101.1) and will so advise the Library and Arts Commissions.

As noted above, the project would be reviewed by the City Planning Commission in the context of applicable objectives and policies of the San Francisco Master Plan. Relevant objectives and policies of these elements are delineated below.

The Commerce and Industry Element

- Objective 2, to "maintain and enhance a sound and diverse economic base and fiscal structure for the city;" and associated Policy 3, to "maintain a favorable social and cultural climate in the city in order to enhance its attractiveness as a firm location."

The Recreation and Open Space Element

- Objective 2, to "develop and maintain a diversified and balanced city-wide system of high quality public open space;" Policy 3, to "preserve sunlight in public open spaces;" and Policy 7, to "acquire additional open space for public use."

The Transportation Element

- Objective 1, Policy 2, to "give priority to public transit as the means of meeting San Francisco's transportation needs, particularly those of commuters;" and Policy 5, to "assure expanded mobility for the disadvantaged."

- Objective 2, Policy 6, to "provide incentives for the use of transit, carpools and vanpools, and reduce the need for new or expanded automobile and automobile parking facilities."

- Objective 7, to "provide safe and pleasant space for pedestrians;" Policy 1, to "widen sidewalks where intensive commercial, recreational, or institutional activity is present..., and Policy 4, to "partially or wholly close certain streets not required as traffic carriers for pedestrian use or open space."

- Objective 9, to "provide secure and convenient parking facilities for bicycles;" Policy 1, "include facilities for bicycle users in governmental, commercial and residential developments; and Policy 3, to "emphasize security in bicycle parking design."

The Urban Design Element

- Objective 1, "emphasis of the characteristic pattern which gives to the city and its neighborhoods an image, a sense of purpose, and a means of orientation;" Policy 3, to "recognize that buildings, when seen together, produce a total effect that characterizes the city and its districts;" Policy 4, to "protect and promote large-scale landscaping and open space that define districts and topography;" Policy 5, to "emphasize the special nature of each district through distinctive landscaping and other features;" Policy 6, to "make centers of activity more prominent through design of street features and by other means;" and Policy 7, to "recognize the natural boundaries of districts, and promote connections between districts."

- Objective 2, "conservation of resources which provide a sense of nature, continuity with the past, and freedom from overcrowding;" Policy 4, to "preserve notable landmarks and areas of historic, architectural or aesthetic value, and promote the preservation of other buildings and features that provide continuity with past development;" Policy 5, to "use care in remodeling of older buildings, in order to enhance rather than weaken the original character of such buildings;" Policy 6, to "respect the character of older development nearby in the design of new buildings;" Policy 7, to "recognize and protect outstanding and unique areas that contribute in an extraordinary degree to San Francisco's visual form and character;" and Policy 9, to "review proposals for the giving up of street areas in terms of all the public values that streets afford."

- Objective 4, "improvement of the neighborhood environment to increase personal safety, comfort, pride and opportunity;" Policy 3, to "provide adequate lighting in public areas;" Policy 4, to "design walkways and parking facilities to minimize danger to pedestrians;" Policy 5, to "provide adequate maintenance for public areas;" Policy 6, to "emphasize the importance of local centers providing commercial and government services;" Policy 12, to "install, promote and maintain landscaping in public and private areas;" Policy 13, to "improve pedestrian areas by providing human scale and interest;" and Policy 14, to "remove and obscure distracting and cluttering elements."

The Environmental Protection Element

- Objective 1, Policy 4, to "assure that all new development meets strict environmental quality standards and recognizes human needs."

- Objective 12, to "establish the City and County of San Francisco as a model for energy management."

- Objective 15, to "increase the energy efficiency of transportation and encourage land use patterns and methods of transportation which use less energy;" and Policy 3, to "encourage an urban design pattern that will minimize travel requirements among working, shopping, recreation, school and childcare areas."

The Community Safety Element

- Objective 2, to "preserve, consistent with life safety considerations, the architectural character of buildings and structures important to the unique visual image of San Francisco;" and Policy 1, to "retain the architectural design character of buildings and structures in the renovation work required for abatement of hazards to life safety."

The Civic Center Area Plan

- Objective 1, to "maintain and reinforce the Civic Center as the symbolic and ceremonial focus of community government and culture;" Policy 1, to "emphasize key public buildings, particularly City Hall, through visually prominent siting;" Policy 2, to "maintain the formal architectural character of the Civic Center;" Policy 3, to "design Civic Center buildings and open spaces to serve as public gathering places for ceremonial, cultural, recreational, and other community activities;" Policy 4, to "provide a sense of identity and cohesiveness through unifying street and Plaza design treatments;" and Policy 5, to "maintain existing streets as vehicular, pedestrian or open space corridors."

- Objective 2, to "develop the Civic Center as a cohesive area for the administrative functions of city, state, and federal government, and as a focal point for cultural, ceremonial, and community activities;" Policy 1, to "design the Civic Center to promote efficiency and convenience within and between the governmental entities represented, and provide for their orderly expansion;" and Policy 2, to "locate civic cultural facilities in the Civic Center."

- Objective 3, to "provide convenient access to and circulation within the Civic Center, and support facilities and services;" and Policy 1, to "locate buildings employing large number of employees and/or attracting large numbers of visitors in convenient pedestrian proximity to public transit and off-street parking facilities."

The project would respond, in general, to the above noted Master Plan Objectives and Policies.

The project would not provide carpool or vanpool spaces for employees (Objective 2, Policy 6). However, the project would have convenient access to most transit carriers (Objective 1, Policy 2).

Design of the New Main Library and relocation of the Pioneer Monument could be considered by some to be unresponsive to Master Plan Objectives and Policies. For example, see Urban Design Element Objective 2, Policy 4 on p. 43 above. However, Urban Design issues are often subjective by nature and arguments for and against the design of the library and relocation of the monument have been, and will continue to be, made. The decision-makers must consider the project's responsiveness to the Master Plan and must balance sometimes competing objectives and policies.

The Zoning Administrator must approve Variances for the New Main Library and the Asian Art Museum to provide less than the required number of parking spaces.

As noted on p. 42, the City Planning Commission must consider project conformity with the Master Plan. The encroachment permit for the New Main Library, to encroach into the street right-of-way below grade, would require consideration of conformity with the Master Plan, as would closure of Fulton Street for a pedestrian mall.

The City Planning Commission must consider any new shadow on Civic Center Plaza, under the sunlight ordinance (Code Section 295).

The encroachment of the New Main Library extension into the street right-of-way below grade would require an encroachment permit, as noted, from the Director of the Department of Public Works.

The Library Commission must approve the design of the New Main Library, including relocation of the Pioneer Monument. The Asian Art Museum relocation, remodeling and expansion of the existing library building would be under the jurisdiction of the Asian Art Commission once the building were transferred to the museum.

Closure of Fulton Street for a pedestrian mall would require the approval of the Board of Supervisors.

The Arts Commission must approve the design of the New Main Library. The Arts Commission must also approve relocation of the Pioneer Monument and the relocation site. Murals inside the existing library building could remain under the jurisdiction of the Arts Commission, although jurisdiction over renovations and additions to that building would transfer to the Asian Art Commission.

The project sponsors (Library Commission for the New Main Library, Asian Art Commission for the Asian Art Museum) must obtain building and related permits from the Central Permit Bureau of the Department of Public Works. No applications have been filed to date.

NOTES - Project Description

/1/ Proposition A, the Earthquake Safety Program for City-Owned Buildings, was passed in November 1989. Seismic improvements to the existing library will be funded by this $59.7 million bond issue, of which $9.4 million was allocated for the library building. (Jorge Alfaro, project manager for the Earthquake Safety Program, telephone conversation, July 8, 1991)

/2/ William Turnbull Associates, *Asian Art Museum - Main Public Library Building: A Feasibility Study*, April 1988.

/3/ Vickers, Jennifer, Planning Assistant, Asian Art Museum, telephone conversation, November 15, 1990.

/4/ Teichman, Judith, Project Manager, Asian at the Civic Center, written communication, June 12, 1991.

III. ENVIRONMENTAL SETTING

A. LAND USE AND ZONING

The Initial Study concluded that the project would not have adverse land use or zoning impacts. Land use and zoning are included in the EIR for informational purposes, to orient the reader.

LAND USE

The 90,000-sq.-ft. New Library block is now occupied by a 38,350-sq.-ft. parking lot and the 7,950-sq.-ft. 100 Larkin Street City office building, with five additional parking spaces adjacent to that building. On the southeast corner of the block is the Pioneer Monument. The remainder of the block is taken up with landscaping, the Brooks Hall truck loading ramp, and sidewalks. The 90,000-sq.-ft. Asian Art Museum block is currently occupied by the existing 175,000-sq.-ft., three-story (80-foot-tall) Main Library (including five basement parking spaces), the 45,000-sq.-ft., three-story 45 Hyde Street City office building, and seven parking spaces associated with the Main Library, in a lot on the McAllister Street side. Fulton Street between Larkin and Hyde Streets is a public street intersecting with Larkin and Hyde Streets, with pedestrian plazas across both streets at each end of the block; it includes about 90 metered parking spaces.

The identity and function of the Civic Center is one of a central area for governmental and cultural activity. A variety of office, retail, restaurant, and residential uses, and historic landmarks surround Civic Center Plaza. Many residential and office structures have ground-floor retail (including restaurant and personal service) uses. The nearest residential uses to the New Library block are two residential hotels south of the project site on the north side of Market Street near Ninth Street, and the Trinity Plaza Apartments, at the southeast corner of Eighth and Market Streets. The nearest residential uses to the Asian Art Museum block are four apartment buildings to the north, across McAllister Street from the existing Main Library. Figure 9 shows existing land uses in the project area.

SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure 9
Existing Land Uses in the Project Area

To the east of the project site is United Nations Plaza which extends from Hyde to Market Street. The Old Federal Office Building is on the north side of U.N. Plaza and the Orpheum Theater/office/retail building and two smaller office/retail buildings are on the south side of the plaza.

North of the project site on the edge of the Civic Center is Hastings College of the Law, a part of the University of California system. Near the college is a mixture of office and apartment buildings, many of which include street-level retail uses. There are also parking lots, auto repair garages and scattered vacant lots and buildings, including three vacant lots adjacent to Hastings on Golden Gate Avenue, which are planned for development by the university. The San Francisco Fire Department headquarters building is also located on Golden Gate Avenue east of Larkin Street.

Northwest of the site are the State Building at 350 McAllister Street/455 Golden Gate Avenue; the Phillip Burton Federal Building at 450 Golden Gate Avenue; and the Governor Edmund G. 'Pat' Brown State Office Building at 505 Van Ness Avenue at McAllister Street. The older portion of the State Building at 350 McAllister Street and another state office building at 525 Golden Gate Avenue are both closed as a result of damage from the October 1989 Loma Prieta Earthquake. They are expected to reopen in 1995 and 1993, respectively./1/ Opera Plaza, a mixed-use complex that includes 451 residential condominium units, is north of the State Office Building. City offices, a surface parking lot, a museum, and a restaurant occupy McAllister Street between Van Ness Avenue and Polk Street.

Brooks Hall (an underground exhibit hall) and Civic Center Garage are beneath Civic Center Plaza, directly west of the project site across Larkin Street. Further west, across Civic Center Plaza, is City Hall. Two blocks west of the site, along Van Ness Avenue, is the War Memorial complex, including the Opera House and Veterans' Building, which houses the Herbst Theater and the San Francisco Museum of Modern Art. South of the War Memorial, on Van Ness Avenue, are Louise M. Davies Symphony Hall and the headquarters of the San Francisco Unified School District.

Southwest of the project site, on Grove Street between Larkin and Polk Streets, is the Civic Auditorium, which is linked to the subterranean Brooks Hall via a pedestrian walkway beneath Grove Street.

Directly south of the project site are two residential hotels and a mix of two- to four-story office buildings with restaurant and other retail uses at street level fronting on Grove Street and Market Street. South of Market Street between Seventh and Tenth Streets are office, ground-floor retail and smaller residential hotel uses. The area also contains several parking lots and vacant lots and buildings, including the former Greyhound Bus terminal on Seventh Street near Market. Two tourist hotels, the San Franciscan and the Holiday Inn-Civic Center, are near Eighth and Market Streets. Across Eighth Street is Trinity Plaza, a 368-unit, four-story apartment complex.

Proposed development in the project vicinity includes residential developments at: 111 Jones Street (Case No. 90.741E) and 201-225 Turk Street (Case No. 90.811E); mixed-use developments at 600 Van Ness Avenue (Case No. 89.627E) and 650 Van Ness Avenue, which was considered in the Van Ness Avenue Plan EIR (Case No. 88.750E, Final EIR certified December 17, 1987). The Police Department has leased the former Hibernia Bank Building, One Jones Street at McAllister Street, for use as administrative offices and the headquarters of a Tenderloin District task force; SFPD acquisition and plans for permanent use of the building are currently under review (Case No. 91.538E)./2/ The City plans to construct a City office building at 400-450 McAllister Street; plans are in the initial stages. Hastings College of the Law plans to develop portions of its "West Block" (the block bounded by Hyde, McAllister and Larkin Streets and Golden Gate Avenue) and the former KGO television building on the block immediately to the east. Potential development includes office, courts, and housing uses./3/ (Case No. 90.333NLA)

Several other public projects are under consideration. The Department of Public Works is considering two projects. One would replace the existing underground steam loop that supplies heat to several of the larger City-owned buildings in the Civic Center with a similar system that would carry hot water rather than steam, providing for more efficient heating. The second would reconstruct Civic Center Plaza according to the 1912 plan, replacing the central rectangular fountain with two smaller, circular fountains located on axis between Civic Auditorium and the State Building, realigning pedestrian and landscaped areas./4/ Another, expansion of the Civic Center Garage, is also under consideration (see Chapter VII., Alternatives). Subject to funding, these three projects could be completed by approximately 2000./5/

ZONING

The project site is located in a P (Public) Use District, land that is owned by a governmental agency and is in some form of public use, including open space. Permitted uses under the City Planning Code (Sec. 234.1) include structures and uses of governmental agencies not subject to the City Planning Code and public structures and uses of the City and County of San Francisco and other government agencies subject to the City Planning Code when in conformity with the San Francisco Master Plan. Under this zoning designation, the proposed project would be a principal permitted use. The areas to the west and northwest of the project site are generally zoned P and contain other public buildings in San Francisco's Civic Center. Farther north and west are areas of C-2 (Community Business), RC-4 (Residential-Commercial Combined, High Density) and NC-3 (Moderate-Scale Neighborhood Commercial) zoning districts. The block directly south of the New Library block and a portion of the block to the east are zoned C-3-G (Downtown General Commercial), as is the project area south of Market Street. The area north and northeast of the project site is a mixture of C-3-G and RC-4 zoning districts. Both the New Library block and the Asian Art block are in an 80-X height and bulk district (80-foot height limit, no bulk limit), while the Fulton Street Mall site is located in an OS (open space) district. The height and bulk of structures in an OS district is determined in accordance with the Master Plan, according to City Planning Code Sec. 290). The new library and the addition to the existing library building would be within the 80-foot height limit. The Fulton Street Mall would be developed as open space.

The project vicinity includes areas that have been afforded special study by the Department of City Planning. The North of Market Residential Special Use District, which includes a portion of the block immediately north of the Asian Art Museum block and extends generally north and east of the project site, was established to preserve residential buildings in the Tenderloin area. The Mid-Market Rezoning Study Area encompasses an area roughly bounded by Market, Mission, Fifth and Eleventh Streets, including the block immediately south of the New Library block. The South Van Ness area is another potential specific plan study area. The Civic Center is the subject of an area plan included in the Master Plan and was the subject of the Mayor's Civic Center Proposal of November 1987, which called for construction of a new Main Library, relocation of the Asian Art Museum in the existing library

building, and creation of a Fulton Street Mall, among other recommendations, as discussed above./4/ Relevant policies of the San Francisco Master Plan, including the Civic Center Master Plan, are described in Chapter II, Project Description, pp. 42 - 44.

Figure 10 shows existing zoning and height and bulk districts in the project area.

NOTES - Land Use and Zoning

/1/ Guthrie, Larry, Chief of Architecture and Engineering, Office of the State Architect, telephone conversations, March 28 and June 27, 1991. The state is preparing a study to assess the need for office space in the Bay Area; reoccupation of 525 Golden Gate Avenue building could be affected by this study, due for release in late 1991.

/2/ Lutes, Steven V., Analyst, Planning Division, San Francisco Police Department, telephone conversation, June 28, 1991.

/3/ Levine, Edward, Director of Facilities, Hastings College of the Law, telephone conversation, April 2, 1991.

/4/ Office of the Mayor, City of San Francisco, Civic Center Proposal, November 1987.

/5/ Malone, Calvin, Capital Program Manager, Department of City Planning, telephone conversation, June 4, 1991.

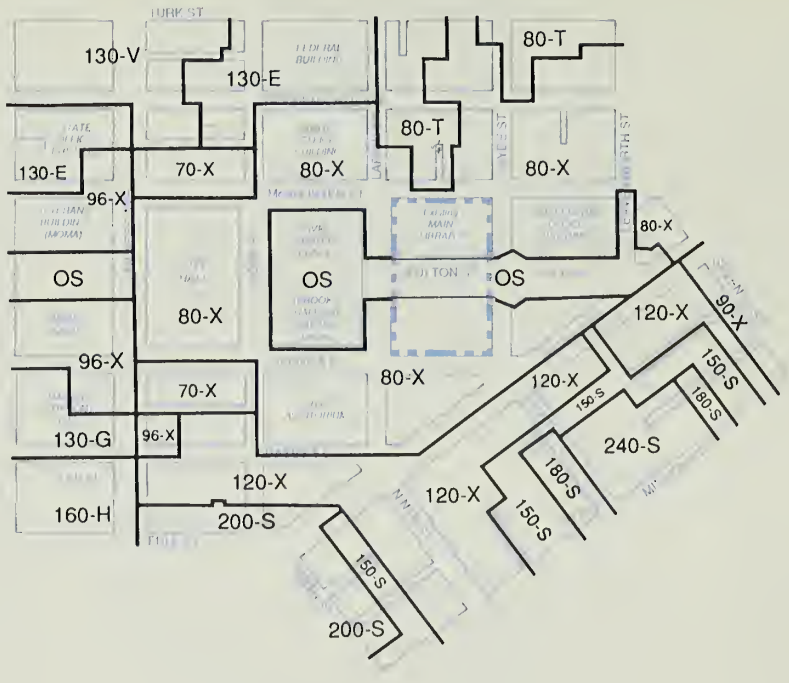
B. ARCHITECTURAL, HISTORIC AND CULTURAL RESOURCES

ARCHITECTURAL AND HISTORIC RESOURCES

Architectural Surveys

The San Francisco Department of City Planning (DCP) conducted a citywide inventory of architecturally significant buildings in 1976. Approximately ten percent of the City's entire stock of buildings was awarded a rating for architectural merit ranging from a low of "0" to a high of "5." The buildings rated from "3" to "5" represent less than two percent of the City's entire building stock.

Two other major architectural classifications have been performed in the Downtown C-3 zoning districts area, one by the Foundation for San Francisco's Architectural Heritage (Heritage) and one by the Department of City Planning for the Downtown Plan. Both the Department of City Planning 1976 Inventory and Heritage (in an unpublished 1984 survey) identified buildings regarding architectural merit in the Civic Center area proposed for inclusion in a proposed local Civic Center Historic



0 800
Feet

Project Site

LEGEND / Zoning

RC-4	Residential-Commercial (High Density)
NC-3	Moderate-Scale Neighborhood Commercial
C-2	Community Business
C-3-G	Downtown General Commercial
P	Public Use

Height and Bulk

E	65 feet
G	80 feet
H	100 feet
S	Mandatory volume reduction at upper floors
T	80 feet or less (North of Market residential SUD)
V	50 feet (Van Ness SUD)
X	Bulk limits not applicable
OS	Bulk limits determined by consulting Master Plan

SOURCE: San Francisco City Planning Code

Figure 10
Zoning / Height and Bulk Districts in Project Area

District (see below), and in the C-3 districts. Appendix B, pp. A. 37 - A. 40, contains an explanation of the rating systems used by these three architectural inventories.

Figure 11 identifies buildings in the project area that are City Landmarks and/or included in the Downtown Plan inventory. Buildings listed in the Department of City Planning 1976 Architectural Inventory and the Heritage survey outside the C-3 districts and outside of the proposed historic district are also shown. Figure 11 also delineates the boundaries of the proposed Civic Center Historic District and that of the existing National Register Historic District./1/ The Landmarks Preservation Advisory Board and the City Planning Commission considered the 1976 Department of City Planning Inventory and Heritage ratings in developing the proposed Civic Center Historic District, as did the Commission in developing the Downtown Plan categories I through IV.

Civic Center and Historic Districts

The project site is located in the San Francisco Civic Center, a group of primarily public buildings that makes up what is considered one of the nation's largest and finest collections of buildings in the style of the Beaux Arts inspired City Beautiful movement./2,3/ The New Library block is the lone remaining largely undeveloped parcel of the four large parcels with prominent public buildings that front directly on Civic Center Plaza. The others are occupied by City Hall, the Civic (Exposition) Auditorium, the existing Main Library, and the State Building (350 McAllister Street), each of which occupies nearly an entire block face across from the plaza. A Civic Center Historic District that would encompass most of the public buildings in the Civic Center has been proposed (see Figure 11)./2/

The San Francisco Civic Center has been the site of City government for more than 110 years./4/ Following the destruction of Old City Hall (See Project Site, below) in the 1906 earthquake and fire, the Board of Supervisors approved a new plan for Civic Center in 1912. The 1912 Civic Center plan can be seen today in the layout of City Hall (1915; City Landmark No. 21), Civic Center [James Rolph Jr.] Plaza (1915; redesigned in 1958 following construction of Civic Center Garage), Civic Auditorium (1915), the current Main Library (1917), and the State Building [350 McAllister Street] (1926). The New Library block was intended under the 1912 plan to be the location of San Francisco's first major opera house, but the Civic Center was expanded

1-5 DCP Rating (1976, Citywide)

I-IV Downtown Plan (1984, C-3 Districts only)

A-C Heritage Rating (non-Historic and non C-3 Districts only; from unpublished data)

CL-21 City Landmark Number

Project Site

Proposed Civic Center Historic District
District Boundary

Contributory

Contributory / Altered

N Noncontributory

V Vacant Lot

National Register of Historic Places
Historic District Boundary

Landmark

Historic Place

Significant within Listed District

Contributor to Eligible (unlisted) District or Eligible for Seoarate Listing

SOURCE: San Francisco Department of City Planning; Downtown Plan; *Spendid Survivors;* Foundation for San Francisco's Architectural Heritage; State Office of Historic Preservation; Environmental Science Associates, Inc.

SF Main Library

Figure 11
Architectural Resources in the Project Vicinity

westward by construction of the War Memorial Complex (Opera House and Veterans' Building) in 1932 (City Landmark No. 84) and the New Library block was never fully developed. As a result, the Pioneer Monument remained the only structure on the New Library block until construction of the USO Hospitality House (the existing 100 Larkin Street building) in 1941 (see Figure 15). The Civic Center was extended eastward by construction of the Federal Office Building on United Nations Plaza in 1936.

Four buildings to contain City offices were proposed for each of the so-called "Four Corners," diagonally framing Civic Center Plaza. Only the southwest corner was developed in a manner compatible with the 1912 theme: the Department of Public Health Building was constructed at Polk and Grove Streets in 1932. The Civic Center Steam Plant, built at Larkin and McAllister Streets (the northeast corner) in 1915, is a public structure with classical details but differs in scale of development from surrounding civic buildings.

Each of the nine buildings above is considered contributory to the proposed Civic Center Historic District; all but the steam plant are identified as significant in the national Historic and Landmark Districts. Other architecturally important buildings in the City's proposed Civic Center Historic District are the Orpheum Theater at Market and Hyde Streets (City Landmark No. 94, Downtown Plan Category I) and the Methodist Book Concern at 83 McAllister Street (Downtown Plan Category I). Newer buildings in the proposed historic district include the Governor Edmund G. 'Pat' Brown State Office Building (1986) at Van Ness Avenue and McAllister Street and Davies Symphony Hall (1980) at Van Ness Avenue and Grove Street. The San Francisco Unified School District Headquarters at Van Ness Avenue and Hayes Street (City Landmark No. 140) may be recommended for inclusion in the proposed Civic Center Historic District when the matter is heard before the Board of Supervisors. Interior spaces of some key Civic Center buildings also may be recommended for inclusion. Among these spaces could be the grand staircase, colonnade and balcony, three math reading rows, lobbies, and corridors of the existing Main Library. The large interior murals could also be included./5/

Arthur Brown Jr. was the architect for many Civic Center buildings, including City Hall (with John Bakewell Jr.), the War Memorial Complex (with G. Albert Lansburgh), and the Old Federal Office Building. The other key Civic Center architects were George Kelham, who designed the existing Main Library; John Galen

Howard, Frederick H. Meyer, and John Reid Jr., who designed Civic Auditorium and implemented the 1912 Civic Center Plan; and Walter D. Bliss and William B. Faville, who designed the Old State Building. Bernard Cahill's Civic Center Plan became the basis of the 1912 plan.

The dome of City Hall, at 300 feet in height, stands out as a visual landmark in the project area. For harmony of design and deference to City Hall, all of the major Beaux Arts buildings in the Civic Center are approximately 80 feet tall (three or four stories of varying height).

The Civic Center Historic District, like other San Francisco historic districts, would include controls on demolition and alteration of structures on an area basis, rather than building-by-building as is the case with City Landmarks. (Numerous structures in the Civic Center have previously been designated as landmarks; these designations would remain were the historic district to be adopted.) The Civic Center is designated as both a National Historic Landmark District and a Historic District on the National Register of Historic Places. These designations offer recognition that certain properties in the district are worthy of preservation and limit alterations in federally funded projects (the landmark designation entails a somewhat higher degree of review). They do not impose conditions on alterations or demolition for non-federally funded projects as would a City-designated historic district. In addition to the Civic Center, the National Register also lists the Market Street Theater and Loft District, which adjoins the project area on the east, extending along Market Street roughly from Sixth to Seventh Streets. The project would not include use of federal funds for construction. Therefore, Section 106 of the National Historic Preservation Act of 1966, as amended, would not apply. Section 106 requires a federal agency head with jurisdiction over a federal, federally assisted, or federally licensed undertaking to take into account the effect of the agency's undertakings on properties included in or eligible for the National Register of Historic Places, and, prior to approval of an undertaking, to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking. Section 106 would be triggered if the New Main Library were to receive federal funds through a source such as the Library Services Construction Act or Title II funds through the U.S. Department of Education administered through the State Library Department, then the Advisory Council on Historic Preservation in concert with State Historic Preservation Office (SHPO) would

enter into a Memorandum of Agreement with the Library Commission and U.S. Department of Education or other Federal Agency funding source. Other interested parties could include the City Planning Commission acting on the advice of the Landmarks Preservation Advisory Board.

Project Site

The project site contains four structures: the existing Main Library and a three-story City office building (45 Hyde Street) on the Asian Art Museum block, and a single-story City office building (100 Larkin Street) and the Pioneer Monument sculpture group on the New Library block. Figures 12 and 13, pp. 59 - 60, are photographs of the project site. Figures 16, 18, 20, 22, 24, and 26, pp. 88 - 98, also show the site.

On the Asian Art Museum block, the existing Main Library building, completed in 1917, is a granite-and-brick-clad steel frame building that occupies most of the block bounded by Larkin, McAllister, Hyde and Fulton Streets. It was designed by architect George Kelham, whose San Francisco career began as supervising architect for the Palace Hotel in 1909. In addition to the Main Library, Kelham's work includes the Shell and Russ Buildings downtown and the former Hills Brothers Coffee plant at the foot of Harrison Street. As was the case with a number of the monumental structures built in the Civic Center, Kelham's library proposal was selected following a design competition. The design conformed in shape and exterior decoration to the overall 1912 Civic Center Plan.

The Main Library was assigned the highest rating of "5" in the 1976 DCP Architectural Inventory and the highest rating of "A" by Heritage; it is considered a Contributory building in the proposed Civic Center Historic District and is a significant building within the National Register Historic and Historic Landmark Districts.

The building is approximately 80 feet high, with three stories of varying height, and in plan resembles a large "P" with its foot on Hyde Street. The building was designed in the Italian Renaissance Revival style, with a rusticated stone base that marks the ground floor, surmounted by a series of arched windows, columns and pilasters topped by an entablature (the horizontal portion of the building above the columns)

View of Existing Main Library from Larkin Street (to be converted to Asian Art Musem)

View of 45 Hyde Street from Hyde and McAllister Streets (to be demolished for Asian Art Museum addition) with existng Main Library in background

SF Main Library ■

SOURCE: Environmental Science Associates, Inc.

Figure 12
Views of Site -
Asian Art Museum Block

View of 100 Larkin Street (to be demolished for new Main Library)

View of Fulton Street, looking west from Hyde to Larkin (to become pedestrian mall)

SOURCE: Environmental Science Associates, Inc

SF Main Library ■

Figure 13
Views of Site -
New Library Block and Fulton Street

that houses the third story and features an inscription identifying and dedicating the library; this legend spans most of the width of the Larkin Street facade. The windows are covered by crosshatched cast-iron lattice work called clathri. On the main facade along Larkin Street are three sets of entry doors. Above the doors are five recessed arches, each between a pair of columns, with projecting end bays framing the arches. Within each arch stands an eight-foot cement figure on a pedestal representing Art, Literature, Philosophy, Science, and Law. The Fulton Street facade includes a single doorway, with end bays identical to those on Larkin Street and with 13 arches between pilasters. There are ground-floor windows in the base beneath each arch. Above the arched windows along Larkin and Fulton Streets is a detailed frieze and cornice. The facade toward Hyde Street and the west end of the McAllister Street facade are identical to the Larkin Street end bays; the remainder of the McAllister Street side of the building is simpler, with 17 narrow rectangular bays and a plain cornice. Tablets inscribed with the names of literary figures are included on each end bay.

The library building includes notable interior architectural features. A wide, ceremonial staircase leads from the main entrance foyer inside the Larkin Street doors to the 65-foot high main hall on the second floor. The main hall, where books were once delivered to patrons by library pages, currently serves as the General Reference room. The west and south sides of the second floor contain high-ceilinged reading rooms (the History and Literature departments, respectively). On the walls of the two reading rooms are 12-foot-high canvas murals by Frank DuMond that were originally exhibited at the Panama Pacific International Exposition in 1915. They depict early Euro-American settlement of the West. Along the balcony that surrounds the ceremonial staircase are 14 murals by Gottardo Piazzoni that date from the 1930s and 1940s.

The 45 Hyde Street building serves as an office annex to the Main Library and for other City offices. It was erected as temporary office structure for the Navy Department in 1945. When sold to the City in 1948, the building contained offices and a large safe belonging to the War Assets Administration. It is a wood frame, stuccoed structure. At three stories, it is shorter than the adjacent Main Library. It is designated Non-contributory in the proposed Civic Center Historic District and was not rated in the 1976 DCP inventory, nor by Heritage.

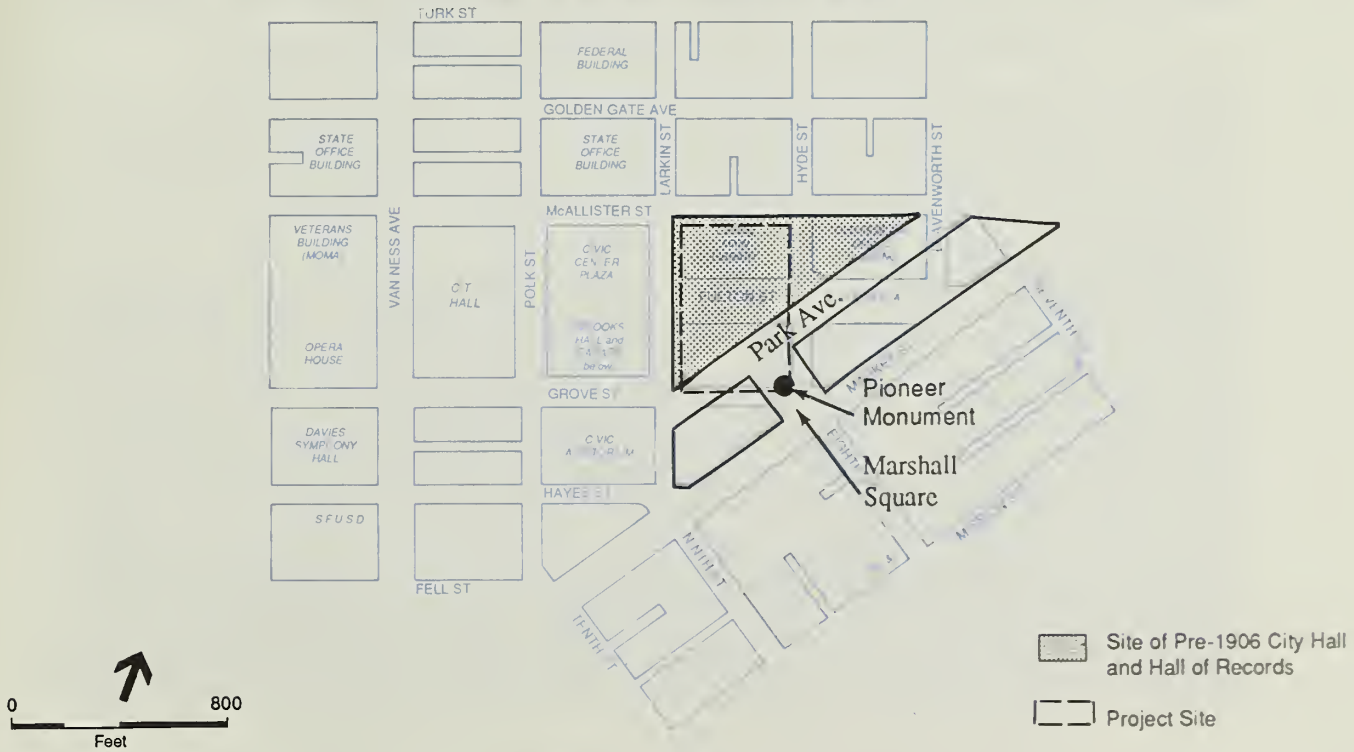
The remainder of the Asian Art Museum block is covered by a paved parking lot between the two buildings on the block and lawn along the south and west facades of the existing Main Library. The lawn is within a stone base, or plinth, that increases in elevation along the Fulton Street side of the building with the gradual downward slope of the lot from west to east.

On the New Library block, which is known as Marshall Square (after John Marshall, who discovered gold in California) there is one building, at 100 Larkin Street. It is a single-story wood and stucco structure that was built in 1941 to serve as a USO Hospitality House during World War II. (Temporary barracks were constructed in Civic Center Plaza during the war and troops were entertained at this Hospitality House across Larkin Street.) The building, designed as a temporary structure, later was the location of the Department of City Planning, and contains various other City offices. The building was constructed in the Streamline Moderne (Art Deco) style, with rounded corners, white walls and blue glass windows. Interior features include a ballroom and a fireplace. The building is set in the center of an expanse of lawn. It is considered Noncontributory in the proposed Civic Center Historic District and was rated "2" in the 1976 DCP inventory, and received a "B" rating from Heritage.

The New Library block also includes the Pioneer Monument sculpture group, a gift from the estate of early San Francisco millionaire and philanthropist James Lick in 1894. The monument, also known as the Lick Monument, stood in the foreground of Old City Hall, which was destroyed in the 1906 earthquake and fire. The monument consists of a series of bronze figures on a stone base with four projecting piers. It was designed to pay tribute to early European settlement in California. The monument was rated "5" in the 1976 DCP inventory. The Pioneer Monument and its relationship to Old City Hall are shown in Figure 14.

The central figure in the monument is a 10-foot tall female figure of "California" holding a spear and shield. She stands atop a 30-foot granite pedestal, with a bear beside her. Two of the four projecting piers are topped by smaller bronze figures representing a missionary bending over an American Indian, with a vaquero (cowboy) standing to the side, and three miners examining a gold nugget. On the other two piers are allegorical representations of "Commerce" and "Plenty." The monument also features bronze relief scenes and portraits of early Euro-American pioneers, including

View of Pioneer Monument from Grove and Hyde Streets
(proposed for relocation within Civic Center)



Pre-1906 street grid (overlaid on existing grid)

SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure 14
View of Pioneer Monument
and Map of Pre-1906 Streets

James Lick, as well as the names of several other pioneers. A granite curb that once surrounded the entire monument remains on the west side, although the present-day curb is a semi-circle, while the original was approximately square. Portions of the iron fence that surrounded the entire monument remain around the central pedestal. The base of the monument was apparently raised and / or uncovered after 1906 (compare two views in Figure 15).

The monument was designed by Frank Happersberger, a California sculptor, following a design competition. The monument was provided for in the will of James Lick, who left a sum of $100,000 for its construction and specified that it be "at the City Hall."/6/ When it was dedicated in November 1894, the monument was located directly in front of the old City Hall (see Figure 15), which was nearly complete after more than two decades of construction. The monument is located in the center of what was known between 1870 and 1906 as City Hall Avenue and as Marshall Square, which was functionally an extension of Eighth Street north of Market Street to Park Avenue, the street that ran in front of the old City Hall (see Figures 14 and 15, pp. 63 and 65). As such, the Pioneer Monument is the last structure remaining that defines the location of the pre-1906 City Hall, destroyed in the Earthquake and Fire. (The street grid of that era can still be discerned in the diagonal frontages of the Wells Fargo Bank building at Grove and Larkin Streets and two buildings near the corner of McAllister and Leavenworth Streets; those lots once faced Park Avenue.)

According to a preliminary feasibility study of relocating the monument, the monument is estimated to weigh about 560 tons, excluding the exposed three-foot-high concrete foundation on which it is situated; the foundation is estimated to weigh 280 tons. The central column and the four projecting piers are apparently constructed of pieces of granite arranged in layers and held together with bronze pins./7/

The remainder of the New Library block consists of a paved parking lot, landscaping (lawn and trees), and a vehicle ramp with a sidewalk that serves as the entrance to Brooks Hall, an underground exhibit hall.

View looking west on Grove Street from near Eighth and Market Streets, with Pioneer Monument on Marshall Square in Foreground of Old City Hall (ca. 1901)

View Looking West on Grove Street from near Eighth and Market Street, with Pioneer Monument on Marshall Square in Foreground (ca. 1926)

SOURCE: Moulin Studio Archives

SF Main Library ■

Figure 15

Historic Views of Site

CULTURAL RESOURCES/8/

In its natural setting, the project site was situated on a relatively flat area, at elevations ranging from 20 to 40 feet above mean sea level. The area was surrounded on all sides by sand dunes. The sandy soils, both on the flatlands and in the hills, supported a sparse covering of vegetation, mainly grasses, scrub brush and occasional stands of oak trees.

There is no recorded evidence that the project site was occupied during the period prior to the arrival of Spanish explorers. However, the possibility exists that Native American activity may have occurred on the site, as the marshes of Mission Bay and the shoreline of Yerba Buena Cove were each less than one mile distant. In recent years, a number of prehistoric sites have been recorded, including the 1969 discovery of a fragmentary human skeleton during excavation for the BART Civic Center station and more recent finds including shellmounds located near Fifth and Market Street and near Moscone Convention Center. These sites are buried at sufficient depth below the present ground surface to have been spared the impacts of more than a century of intensive development.

During the Spanish and Mexican Periods (1776-1845), it is unlikely that there was any activity that would have regularly brought anyone to the project site or its immediate vicinity, as Mission Dolores and the Presidio, the two principal centers of activity, were located some two and three miles, respectively, from the site. However, the gradual growth of the village of Yerba Buena, particularly during the first few years of American control (after 1846), could have led to some activity, although not likely permanent, in the project vicinity.

The first recorded use of the project site was as San Francisco's first official (public) cemetery, beginning about 1850. Yerba Buena Cemetery, as it was called, occupied a large triangular parcel bounded by the present Market, McAllister and Larkin Streets, and included both the New Library block and the Asian Art Museum block, then located at the western edge of the rapidly growing city.

Throughout the early 1850s, Yerba Buena Cemetery witnessed considerable use. Usage of the cemetery began to decline, however, by the middle of the decade, and burials began to be held at the new Lone Mountain Cemetery, located about 1.5 miles

to the west. Most, but apparently not all, remains were disinterred and moved to the new cemetery, and Yerba Buena Cemetery became a public park, although the cemetery remained extant to some degree until the mid-1860s.

Beginning in the late 1850s or early 1860s, systematic grading began in the area around the present-day Civic Center Plaza and, as the work proceeded, an increasing number of people settled there.

In 1870, the state legislature designated the former Yerba Buena Cemetery as the site of San Francisco's new City Hall. Work started on the structure in 1871. However, construction went slowly, and the entire complex, including an adjacent Hall of Records, was not completed until 1897 (although the Hall of Records was finished earlier). When complete, City Hall and the Hall of Records occupied a street frontage of some 800 feet along what was then Park Avenue (see Figure 14, p. 63). Designed with massive foundations to resist earthquakes, City Hall was nonetheless reduced to rubble in the 1906 earthquake, although the Hall of Records survived.

In the aftermath of the earthquake, City departments were housed in leased offices, primarily downtown, while confusion reigned with regard to rebuilding City Hall. With the exception of a few offices in the main part of the building that were retained, and the adjoining Hall of Records, which had been nominally repaired, the entire City Hall building was razed and cleared away when investigations concluded that a full scale rehabilitation would be technically unfeasible as well as expensive.

Despite the fact that remains were relocated from the old Yerba Buena Cemetery in the 1860s, graves were reportedly uncovered during construction of the pre-1906 City Hall and again in 1934 during construction of the Federal Office Building on what is now United Nations Plaza, which was part of the cemetery site. In addition, a human skull, believed to date from Yerba Buena Cemetery, was found during work in an elevator pit at the existing Main Library. The possibility remains that further human remains associated with the site's use as Yerba Buena Cemetery could be located on both the New Library block and the Asian Art Museum block. Artifacts from the Old City Hall (including portions of the building's massive foundations) could also be present.

NOTES - Architectural, Historic and Cultural Resources

/1/ The boundaries of the National Historic Landmark District are similar to those of the National Register Historic District. Excluded from the landmark district are City Hall Annex (450 McAllister Street) and the adjacent parking lot; the Wells Fargo Bank building at Grove and Larkin Streets; and the sub-blocks bounded by Market, Hyde and Fulton Streets and by Market, Seventh, McAllister and Leavenworth Streets.

/2/ Marsh, Vincent, Secretary, San Francisco Landmarks Preservation Advisory Board (LPAB), conversation, July 17, 1991, and LPAB, San Francisco Civic Center Historic District, proposal for adoption, January 1988, updated May 15, 1991. The proposed historic district has been approved by the LPAB and by the City Planning Commission; it is awaiting approval from the Board of Supervisors.

/3/ Gebhard, David, Eric Sandweiss and Robert Winter, *The Guide to Architecture in San Francisco and Northern California*, 1985, Salt Lake City: Peregrine Smith Books, page 82.

/4/ The descriptions of Civic Center are from the publication cited in Note 1, above, along with the National Register of Historic Places, Inventory-Nomination Form for Civic Center Historic District, December 1974, and National Register of Historic Places, Inventory-Nomination Form for Civic Center National Historic Landmark District, November 1984.

/5/ Marsh, Vincent, Secretary, LPAB, telephone conversation, October 4, 1991.

/6/ Deed of Trust of James Lick, Esq., September 21, 1875, recorded in the San Francisco Recorder's office.

/7/ O'Brien-Kreitzberg & Associates, Inc., Preliminary feasibility study for the relocation of the Pioneer Monument, October 1991.

/8/ The information in this section is from Allen Pastron, Ph.D., Archeo-Tec Inc., Archival Cultural Resources Evaluation of the Proposed Main Library Development Project and Two Affiliated Parcels in the Civic Center Plaza Area, San Francisco, California, November 1990. This report is on file and available for review at the Department of City Planning, 450 McAllister Street, San Francisco.

C. URBAN DESIGN AND VISUAL QUALITY

The project site includes three buildings. The existing Main Library and 45 Hyde Street buildings cover nearly the entire Asian Art Museum block, with a small parking area off McAllister Street between the two buildings. The 100 Larkin Street building covers a portion of the New Library block; lawn and a parking lot cover the remainder of the block. The Pioneer Monument sculpture group is located at the southeast corner of the block. Fulton Street between Larkin and Hyde Streets is currently a public street with on-street parking on both sides. It is part of a view corridor that extends from Market Street across United Nations Plaza, Fulton Street, and across Civic Center Plaza to City Hall.

The existing library is a three-story, approximately 80-foot-tall steel-frame building clad in gray California granite and brick. The buildings at 45 Hyde Street and 100 Larkin Street were both erected during World War II as temporary structures. Each is a stucco-covered wood-frame structure. The single-story 100 Larkin Street building is in the Art Moderne Style, with rounded corners and a streamlined appearance; the building at 45 Hyde Street is three stories in height (approximately 40 feet) and without architectural detail. Both buildings would be demolished for the project. The Pioneer Monument consists of a large bronze statue atop a central granite column and four smaller bronze figures on smaller granite piers. It would be moved to another Civic Center location as part of the project. Full descriptions of the structures on the project site are provided in Section III.B., Architectural, Historic and Cultural Resources, pp. 52 - 68. Views of the project site are shown in Section IV.B, Urban Design and Visual Quality, pp. 87 - 101.

The project site is in the San Francisco Civic Center, which includes a collection of monumental public buildings reflecting the Beaux Arts-inspired City Beautiful movement. A number of newer office structures, ranging up to 29 stories in height, are located in the surrounding area. The tallest nearby building is the California State Automobile Association tower (29 stories) at Van Ness Avenue and Fell Street, four blocks southwest of the New Library block. The Civic Center area and its buildings are also described in Section III.B. Architectural, Historic, and Cultural Resources, pp. 52 - 68.

Other tall structures in the area include the Hastings College of the Law dormitory (27 stories) at 100 McAllister Street; the Phillip Burton Federal Building (20 stories, 450 Golden Gate Avenue); the 13-story mixed office and residential Opera Plaza at Van Ness and Golden Gate Avenues; the 29-story mixed office and residential Fox Plaza at Market, Hayes and Polk Streets; the 29-story California State Automobile Association tower mentioned above (100 Van Ness Avenue); the 24-story Bank of America Data Center building at Market and Eleventh Streets; the 16-story State Compensation Insurance Fund building at Market and Ninth Streets; and the 12-story 1145 Market Street and 11-story 1155 Market Street office buildings, between Seventh and Eighth Streets.

Civic Center Plaza occupies a double block immediately west of the project site. It is bounded by McAllister, Larkin, Grove, and Polk Streets. The plaza includes a rectangular fountain that extends nearly from Polk to Larkin Streets on a line perpendicular to City Hall. Rows of flagpoles and pollarded sycamore trees line the fountain, and there is a square lawn to the north and south of the fountain. Groups of olive trees flank the lawns to the east and west.

United Nations Plaza extends to the east from the project site to Market Street, occupying the former right-of-way of Fulton Street. This brick-paved plaza is framed on the north by the old Federal Building and on the south by the Orpheum Theater and a triangular structure at One United Nations Plaza. The view west through United Nations Plaza frames City Hall between the Old Federal Office Building and the Orpheum Theater.

Because of the openness of Civic Center Plaza, the two blocks that make up the project site are visible from a large part of the Civic Center area west to City Hall, on the west side of the Plaza. The Asian Art Museum block is visible across the New Library block (Marshall Square) from the south and southeast and from U.N. Plaza to the east. The New Library block is also clearly visible from U.N. Plaza. The project site can be seen from Van Ness Avenue and Grove Street, partially obscured by the trees of Civic Center Plaza. From points farther west, City Hall obstructs the view of most of the Asian Art Museum block, although the New Library block can be seen. The site is also visible from the west along McAllister Street to Van Ness Avenue; from farther west, City Hall begins to obscure the site from view. Both blocks of the project site, as well as Fulton Street, can be seen from the north on Larkin and Hyde Streets for at least two blocks, although the setback of the existing library from Larkin Street allows other structures to obscure more of the library than would otherwise be the case were it built to the lot line. The site is visible to the south from Larkin Street at Market Street and on Eighth Street south of Market nearly to Mission Street .

The top of the existing library building is visible in the long-range view from Twin Peaks as part of the complex of monumental structures that make up the Civic Center. From this view, the base of the existing library, the New Library block, and Fulton Street is obscured by the intervening Department of Public Health building, the CSAA building and Fox Plaza. Twin Peaks cannot be seen from ground level on the site due to these intervening buildings.

From the site there are views of City Hall across Civic Center Plaza. Long-range views are blocked in other directions by intervening structures, although several taller buildings in the area are visible to the north, west and south. Downtown highrises are visible in longer views to the east and northeast. There are few public views from within the existing library building; the large second-story windows are above eye level, and windows on the third floor are primarily in staff areas. Exceptions include the San Francisco History Room, which has views to the south, including the New Library block, and the stack areas (closed to the public since the 1989 Loma Prieta earthquake), with views to the north.

City Hall is visible from the intersection of Eighth and Market Streets, across the New Library block and Civic Center Plaza. As noted, the existing library can also be seen across the New Library block from this location, as can the old State Building (350 McAllister Street). Looking east from City Hall, the blank east wall of the Orpheum Theater is visible across the New Library block.

D. SHADOW AND WIND

SHADOW

The existing 100 Larkin Street building on the New Library block and other buildings in the Civic Center cast shadows on streets and sidewalks in the project vicinity. Existing and project-related shadow patterns for various times of the day and year are discussed in detail in Chapter IV. Environmental Impacts, pp. 101-105.

WIND

U.S. Weather Bureau and Bay Area Air Quality Management District data show that westerly (i.e., from the west) to northwesterly winds are the most frequent and strongest winds during all seasons in San Francisco./1/ Of the 16 primary wind directions measured at the Weather Bureau station (at a height of 132 ft.), four directions comprise the greatest frequency of occurrence as well as the majority of strong wind occurrences; these are northwest, west-northwest, west and west-southwest. Calm conditions occur about two percent of the time.

Average wind speeds are the highest during summer and lowest during winter months. Strongest peak winds, however, occur in the winter when speeds of 47 miles per hour (mph) have been recorded./2/ The highest average wind speeds are in the mid-afternoon and the lowest are in the early morning.

Pedestrian Comfort and Wind Criteria

Wind conditions partly determine pedestrian comfort on sidewalks and in other public areas. Large buildings can redirect wind flows around and down to street level, resulting in increased wind speed and turbulence at street level. In order to provide a comfortable wind environment for people in San Francisco, the City established specific comfort criteria to be used in the evaluation of proposed buildings. The City Planning Code specifically outlines these criteria for the Downtown Commercial (C-3) District and each of the Rincon Hill, Van Ness Avenue, and South of Market areas [Sec. 148, 249.1(a)(3), 243(c)(8), 263.11(c)].

The comfort criteria are based on pedestrian-level wind speeds that include the effects of turbulence, referred to as "equivalent wind speeds." For example, Section 148 of the City Planning Code establishes an equivalent wind speed (as defined in the Code) of 7 mph and 11 mph as comfort criteria, and 26 mph equivalent wind speed as a wind hazard criterion. New buildings and additions to buildings may not cause ground-level winds to exceed these levels more than ten percent of the time year round between 7:00 a.m. and 6:00 p.m./3/ If existing wind speeds exceed the comfort level, new buildings and additions must be designed to reduce ambient wind speeds to meet the requirements. The criteria of Section 148 are not required for the project site. However, the comfort and hazard criteria are useful in describing existing conditions and project impacts.

Existing and project-generated wind conditions are discussed in Chapter IV, Environmental Impacts, pp. 115 - 118 and Appendix C, pp. A.41 - A.49.

NOTES - Wind

/1/ The U.S. Weather Bureau data used in this analysis were originally gathered at the weather station atop the Old Federal Building at 50 United Nations Plaza during the years 1945-1950. Data were taken hourly, annually for 16 wind directions. The data base, comprised of 32,795 hourly observations, is of sufficient length to provide a reliable estimate of future climatic conditions in San Francisco.

/2/ E. Jan Null, Climate of San Francisco, NOAA Technical Memorandum, NWS WR-126, February 1978.

/3/ The City Planning Code specifies the hours of 7:00 a.m. to 6:00 p.m. The available weather data cover the hours of 6:00 a.m. to 8:00 p.m. Thus, observation from two additional evening hours and one additional morning hour are included in these data. Because winds are generally stronger in the afternoon and evening than in the morning, this approximation is conservative -- it is likely to overestimate the existing and projected wind speeds.

E. TRANSPORTATION

The project site is located in the San Francisco Civic Center and includes two city blocks and the portion of Fulton Street between Larkin and Hyde Streets. The site includes about 220 public parking spaces (about 130 spaces in a public lot on the New Library block (Marshall Square) and about 90 metered on-street spaces on Fulton Street), plus 17 spaces for City employees' vehicles. The site area is served by local streets and by portions of the regional freeway system (see Figure 1, p. 27). Access to freeways U.S. 101 and I-80 is approximately one-half mile from the site, via ramps at 13th Street and South Van Ness Avenue and Eighth and Bryant Streets, respectively.

The Loma Prieta earthquake of October 1989 had notable effects on the regional transportation network; repairs to most facilities have yet to be effected, with the exception of the Bay Bridge, where one span of the upper deck collapsed in the earthquake. Repairs were completed one month later and operations have returned to pre-earthquake patterns.

In Oakland, the Cypress Structure of I-880, demolished following its partial collapse in the Loma Prieta earthquake, is proposed to be rebuilt to the west of the original route./1/

Within San Francisco, major damage to State Route 480 (the Embarcadero Freeway), the I-280 extension north of U.S. 101, and the U.S. 101 ramps between Fell and Turk Streets caused closure of these routes. The section of I-280 between Army Street and Fourth Street was repaired and has reopened. The section of I-280 between Army Street and U.S. 101 is scheduled to be repaired by 1994./1/

In April 1990, Mayor Agnos proposed that the City demolish the elevated Embarcadero Freeway. Demolition of the structure was approved, initiated in

February 1991 and completed in October 1991. Mayor Agnos has proposed constructing a depressed roadway within the same right-of-way. The feasibility of implementing this roadway and the sources of funding that would be required are being studied by City staff at the Mayor's direction and will be subject to separate environmental review.

In addition, the "terminal separation structure," the elevated connector between the Bay Bridge and the Embarcadero Freeway, will be demolished, as will its on- and off-ramps at Folsom Street. Caltrans District 4 plans to replace the terminal separation with a new structure (which would be lower in height than the existing structure) to enable traffic flow between the Bay Bridge and whatever roadway replacement is constructed within the Embarcadero right-of-way./2/

Caltrans also is proceeding with demolition of the U.S. 101 elevated structure (the Central Skyway) north of the Oak/Fell Street on- and off-ramps. This demolition, which will result in removal of the Gough/Turk Streets on-ramp and the Franklin Street/Golden Gate Avenue off-ramp, began in July 1991 and is expected to be completed by the end of 1991. The effects on surface streets of removing this portion of the freeway from service will depend on what replacement facility, if any, is agreed upon by Caltrans and the City of San Francisco, but could include alterations in local traffic patterns in the vicinity of Civic Center and the area around Market Street and South Van Ness Avenue. Street improvements, including new signalization, would likely be made to surface streets designated as replacements for the demolished elevated portion of U.S. Highway 101.

The New Library block is bounded by Larkin, Fulton, Hyde and Grove Streets and is currently occupied by a single-story City office building on the west end of the block (100 Larkin Street) with five adjacent parking spaces for City staff, by the Pioneer Monument, and by a 130-space surface level parking lot, the Marshall Square Lot. The Asian Art Museum block is bounded by Larkin, McAllister, Hyde and Fulton Streets and is currently occupied by the existing Main Library and by a three-story City office building at 45 Hyde Street. There are seven parking spaces between the two buildings and five in the library basement, all 12 of which are used by staff. These are two loading spaces. Fulton Street is a through street with about 90 on-street parking spaces; it is a one-block section in the project area, with pedestrian plazas at either end. As noted above, there is a total of 220 public parking places and 17 designated City vehicle/employee spaces on the site.

The existing street network in the vicinity of the project site is shown in Figure 35, p. 139, and in Figure D.2, p. A.57. The site area is served by several major vehicular thoroughfares, including Oak, Fell and Market Streets. Oak and Fell Streets provide access to the western portions of the City, while Market Street provides access to the downtown and the southeast areas of the City. In the vicinity of the site, McAllister Street, Van Ness Avenue, Market Street, Golden Gate Avenue, and Mission Street are designated as Transit Preferential Streets, which are important streets for transit operations where interference with transit vehicles by other traffic should be minimized./3/Hyde, Larkin, Hayes, Fell, Sixth, Seventh, Eighth, Ninth, and Tenth Streets and Van Ness Avenue are designated as Primary Vehicular Streets, which the Master Plan defines as "major routes for automobile and truck movements into and out of the Downtown area." Seventh Street is a proposed Pedestrian Oriented / Vehicular Street in the Downtown Plan. Fulton Street between Larkin and Hyde Streets is under consideration for conversion to a pedestrian mall, which would be considered Open Space/4/; this potential change is examined in this EIR.

Market Street, McAllister Street and Polk Street have two travel lanes operating in each direction. (McAllister Street operates one-way with three westbound lanes east of Hyde Street.) Ninth Street has four northbound lanes. Hyde Street is one-way with three southbound lanes; Grove Street operates with one lane in each direction near Hyde Street and two lanes in each direction west of Larkin Street. Larkin Street has three lanes northbound south of Grove Street and north of McAllister Street, and two lanes northbound and one lane southbound in front of the Civic Center Garage, between Grove and McAllister Streets. Fulton Street operates with one lane in each direction between Larkin and Hyde Streets. Van Ness Avenue has three travel lanes in each direction.

The Civic Center area is well served by the San Francisco Municipal Railway (MUNI) and other regional transit operators. Figure 35, p. 139, illustrates transit routes that serve the project site. Stops for approximately 20 MUNI bus and Metro lines are within walking distance of the project site./5/ The site is served by MUNI electric trolley and motor coach lines, providing radial service to and from the downtown area. MUNI bus lines operate on Larkin, Hyde, McAllister, Market, Hayes, Eighth, Ninth, and Mission Streets and on Van Ness and Golden Gate Avenues in the project

vicinity. The closest MUNI stops to the project site are on Larkin Street north of Market Street, on Larkin Street at McAllister Street, on Hyde Street at McAllister, and on Hyde Street south of Fulton Street, all serving the 19-Polk; and on McAllister Street at Hyde and at on McAllister at Larkin, serving the 5-Fulton. On Market Street, there are seven stops between Seventh and Ninth Streets serving seven MUNI lines. MUNI Metro light rail vehicle lines are accessible at the Civic Center station, located at Eighth and Market Streets, across Grove Street from the New Library block. Two transit shelters are located on sidewalks adjacent to the project site: on Larkin Street at McAllister Street and on Hyde Street south of Fulton Street.

Several regional transit operators also provide service to the project site. Regional transit service to and from the East Bay is provided by the Bay Area Rapid Transit District (BART), which stops at the Civic Center Station. BART also links Daly City and the southern areas of San Francisco with the Civic Center. AC Transit does not have any stops in the immediate vicinity of the project site; however, this carrier, which stops at the Transbay Terminal, can be reached by the Market Street lines or MUNI Metro lines.

SamTrans, the San Mateo County operator, provides transit service to the Peninsula, serving the Civic Center directly, with an inbound stop at the intersection of Grove, Market and Eighth Streets and an outbound stop at McAllister and Hyde Streets. Five other SamTrans lines operate on Mission Street and stop within two blocks of the site.

CalTrain provides service to the Peninsula and San Jose. The CalTrain station, at Fourth and Townsend Streets, is accessible from the Civic Center via the MUNI 42-Downtown Loop on Van Ness Avenue or by taking a Market Street bus or Metro line to Fourth and Market Streets and then transferring to MUNI lines 30-Stockton or 45-Union/Stockton that serve the CalTrain Depot.

The Golden Gate Bridge, Highway and Transportation District (Golden Gate Transit) provides a.m. and p.m. peak-period bus service from/to Marin and Sonoma counties. The closest boarding stops are on McAllister Street, at Hyde Street and at Van Ness Avenue. Discharge stops are located on Golden Gate Avenue, at Polk and Hyde Streets. Golden Gate Transit provides ferry service to terminals in Larkspur and Sausalito from the Ferry Building. It operates a shuttle service from the Ferry

Building to the Civic Center area. Golden Gate Transit also operates a vanpool and club (subscription) bus program to areas not served by fixed routes.

The RIDES carpool program, operating as a nonprofit, publicly funded corporation, provides consulting and matching services to help establish Bay Area carpools and vanpools.

Grove, Polk, Larkin, Market and Mission Streets are designated as Preferred Commute Bike Routes in the Transportation Element of the City's Master Plan. Only Grove Street (west of Polk) is currently posted as a bicycle route.

The project parking study area is bounded by Golden Gate Avenue to the north, Mission Street to the south and east, and Gough Street to the west. Parking within the study area consists of metered and unmetered on-street parking spaces, and publicly accessible off-street lots and garages. Most of the curbside parking is at least 85 percent occupied on an average weekday during the weekday peak hour parking occupancy (1:00 p.m. to 2:00 p.m.). Fulton Street between Larkin and Hyde Streets is about 52 percent occupied./6/ During major events at Civic Auditorium and at Brooks Hall, the underground facility beneath Civic Center Plaza, on-street parking within one quarter-mile of the hall reaches saturation.

NOTES - Transportation

/1/ Murphy, Lisa, Public Information Officer, Caltrans, telephone conversations, April 23 and October 15, 1991.

/2/ Bayol, Greg, Public Information Officer, Caltrans, telephone conversation, June 13, 1991.

/3/ San Francisco Master Plan, Transportation Element, amended November 1984, p. I.4.16.

/4/ San Francisco Master Plan, Downtown Area Plan, amended December 1987, Map 7, p. II.1.47.

/5/ Walking distance is considered one-fourth of a mile.

/6/ Weekday on-street parking counts were conducted by Wilbur Smith Associates (WSA) on Wednesday, October 10, 1990.

F. AIR QUALITY

The Bay Area Air Quality Management District (BAAQMD) operates a regional monitoring network which measures the ambient concentrations of six air pollutants: ozone (O_3), carbon monoxide (CO), fine particulate matter (PM_{10}), lead (Pb), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). On the basis of the monitoring data, the Bay Area, including San Francisco is designated a non-attainment area with respect to the federal ozone and CO standards. In addition, San Francisco occasionally experiences violations of state eight-hour CO and PM_{10} standards. A three-year summary of the data collected at the BAAQMD monitoring station nearest the project site (about 1.4 miles south at 10 Arkansas Street) is shown in Appendix E, p. A.62, together with the most stringent corresponding state and/or federal ambient air quality standards in San Francisco. During 1989, there were no violations of the state or federal eight-hour CO standards, and there were 13 violations of the state 24-hour average PM_{10} standard. During 1988, there was one violation of the state and federal eight-hour CO standard and five violations of the state 24-hour average PM_{10} standard in San Francisco. In 1987, there was one violation of the state and federal eight-hour average CO standard and four violations of the state PM_{10} standards./1/

CO concentrations are monitored from both the 10 Arkansas Street areawide monitoring station and from 939 Ellis Street, which is located along Van Ness Avenue, a heavily traveled corridor.

In December 1985, the City of San Francisco monitored CO and counted traffic at the intersection of Sixth and Brannan Streets, less than one mile from the project site. This data, along with CO background data from the Potrero District air quality station, was used to correlate the relationship between traffic and CO emissions. Data from these two monitoring locations indicate that areas in San Francisco near streets with high traffic volumes and congested flows may experience violations of the eight-hour CO state and federal standard under adverse meteorological conditions.

Comparison of these data with those from other BAAQMD monitoring stations indicates that San Francisco's air quality is among the least degraded of all the developed portions of the Bay area. Three of the four prevailing winds, west, northwest, and west-northwest, blowing off the Pacific Ocean, reduce the potential for San Francisco to receive air pollutants from elsewhere in the region.

Data from air quality monitoring in San Francisco show that there have been occasional local exceedences of state and federal CO and state (but not federal) fine particulate standards, due largely to air pollutant emissions from within the City. CO is a non-reactive air pollutant, the major source of which is motor vehicles. CO concentrations are generally highest during periods of peak traffic congestion. Particulate levels are relatively low near the coast, increase with increasing distance from the coast, and peak in dry, sheltered valleys. The primary sources of particulates in San Francisco are demolition and construction, and motor vehicle travel on paved roads.

San Francisco, like all other sub-regions in the Bay Area, contributes to regional air quality problems, primarily ozone, in other parts of the Bay Area. Ozone is not emitted directly from air pollutant sources, but is produced in the atmosphere over time and distance through a complex series of photochemical reactions involving hydrocarbons (HC) and nitrogen oxides (NO_X), which are carried downwind as the photochemical reactions occur. Ozone standards are violated most often in the Santa Clara, Livermore, and Diablo Valleys, because local topography and meteorological conditions favor the buildup of ozone and its precursors there.

In 1983, emissions from motor vehicles were the source of 87 percent of the CO, 39 percent of the HC, 62 percent of the total suspended particulates (TSP), 9 percent of the sulfur oxides (SO_X), and 54 percent of the NO_X emitted in San Francisco./2/ These percentages are expected to apply reasonably well to current conditions.

In response to the Bay Area's ozone and CO non-attainment designations, the Association of Bay Area Governments (ABAG), BAAQMD, and the Metropolitan Transportation Commission (MTC) prepared and adopted the *1982 Bay Area Air Quality Plan (1982 Plan)*./3/ The *1982 Plan* established schedules and strategies to comply with federal ozone and CO standards established under the Clean Air Act by December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and CO (standards are occasionally violated). The Clean Air Act Amendments of 1990 require that, within three years of enactment (November 15, 1990), the state submit to the U.S. Environmental Protection Agency (EPA) a revised state Implementation Plan.

Effective January 1, 1989, the California Clean Air Act provides for the designation of air districts into three classes: moderate (defined as a district that the California Air Resources Board (ARB) determines can attain state and federal air quality standards by December 31, 1994), serious (a district that the ARB determines cannot attain the state air quality standards until after December 31, 1994, but by no later than December 31, 1997), and severe (a district that the ARB determines cannot attain the state air quality standards until after December 31, 1997, or for which the ARB is unable to specify an attainment date). In each case, the Act specifies air pollution control strategies that must be adopted. In all cases, plans are required to demonstrate a five-percent-per-year reduction in the district-wide emissions for each non-attainment air pollutant or its precursors, unless the ARB determines that the alternative emission reduction strategy is equal to or more effective than district-wide emission reductions in improving air quality or that, despite inclusion of every feasible measure and an expeditious adoption schedule, the district is unable to achieve a five percent reduction per year. The Bay Air Basin has been designated as severe for ozone and PM_{10}, due it its inability to attain State standards by 1997 and serious for CO, due to its inability to meet state standards by 1994./4/

NOTES - Air Quality

/1/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on respirable particulate matter (PM_{10}), which has been demonstrated to have health implications when inhaled. The present state and federal PM_{10} standards are 50 ug/m^3 and 150 ug/m^3, respectively, of respirable particulate matter. Although both the previous and present particulate standards are measured in ug/m^3, under the PM_{10} standards only those particulates 10 microns or less in size are measured. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50% to 60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM_{10} standards. BAAQMD is presently monitoring PM_{10} at seven Bay area monitoring stations, including the station at 16th and Arkansas Streets in San Francisco.

/2/ Bay Area Air Quality Management District (BAAQMD), "Base Year 1983 Emissions Inventory, Summary Report," San Francisco, California, August 1987.

/3/ Association of Bay Area Governments (ABAG), BAAQMD, and MTC, *1982 Bay Area Air Quality Plan*, Berkeley, California, December 1982.

/4/ Dracott, Joan, Public Information Officer, Bay Area Air Quality Management District, telephone conversation, July 19, 1991.

IV. ENVIRONMENTAL IMPACTS

An application for environmental evaluation for the New Main Library was filed on December 12, 1990. On the basis of an Initial Study published on April 11, 1991, the Department of City Planning, Office of Environmental Review, determined that an Environmental Impact Report (EIR) was required. Issues determined to require no further discussion as a result of the Initial Study include land use and zoning, glare, population and housing, operational noise, construction air quality, utilities/public services, biology, hydrology, water quality, energy/natural resources, and asbestos removal. Therefore, the EIR does not discuss these issues. (See Appendix A, pp. A.1-A.36 for the Initial Study.) A discussion of Land Use and Zoning is included (see Chapter III. Environmental Setting, pp. 47 - 52) for informational purposes, to provide the context for understanding the impacts of the project.

Not all of the impacts presented in this section are physical environmental effects as defined by the California Environmental Quality Act (CEQA). Non-physical effects are included here for informational purposes only.

A. ARCHITECTURAL, HISTORIC AND CULTURAL RESOURCES

ARCHITECTURAL AND HISTORIC RESOURCES

The existing Main Library Building, on the Asian Art Museum block, received the highest rating of "5" in the Department of City Planning's 1976 citywide architectural inventory, and an "A" rating by Heritage. The three-story library annex (45 Hyde Street) was unrated. The Pioneer Monument, on the New Library block, was also rated "5." The single-story USO Hospitality House (100 Larkin Street), also on the New Library block, was rated "2" in the DCP survey, and "B" by Heritage. (Chapter III. Environmental Setting, pp. 52 - 68, describes these structures in detail.)

The existing Main Library would be remodeled as part of the project for use as the Asian Art Museum of San Francisco. The renovation plan would preserve the facades of the existing library building and some of the larger ceremonial spaces inside the building.

Based on a 1988 feasibility study for the Asian Art Museum, the following renovations are planned for the existing Main Library building./1/ Planning is still in the preliminary stages.

The 45 Hyde Street building would be demolished and replaced with a two-story addition to the existing library building. The preliminary feasibility study assumed that the addition would continue the existing library cornice line at about 80 feet along both McAllister and Hyde Streets. According to the feasibility study, a depressed roof would be about 40 feet below the cornice, and a false facade would continue up to the cornice line. The addition would be designed to allow construction of two additional floors in the future.

Based on the feasibility study, the McAllister Street frontage would be extended to Hyde Street, continuing the existing pattern of recessed windows and cornice line. The corner of McAllister and Hyde Streets would be similar to the end bays on Larkin Street. The Hyde Street frontage would continue the cornice line; this wall would be plainer than the other three sides of the building. Exterior wall additions would likely be of precast concrete, with design, color and finish intended to be compatible with the existing structure.

The building's main entrance would remain on Larkin Street. The inscriptions identifying and dedicating the building, above the Larkin Street entrance, would be replaced with an inscription identifying the building as the Asian Art Museum. The cement statues representing Art, Literature, Philosophy, Science, and Law, also above the Larkin Street entrance, would be removed, and the inscribed names of literary figures would be removed from end bays on all four sides of the building./2/ If the feasibility study were followed, the single entry on Fulton Street would be replaced by two new entryways that would replicate the existing doorway; a disabled entrance ramp would be added and the ground-floor windows on Fulton Street would be extended to floor level to provide additional light.

Some of the main interior spaces would be retained in the Asian Art Museum. The processional stairway from the main entrance to the existing General Reference room would remain, and the reference room would become a reception room. The west second floor reading room would be converted to a gallery, while the larger south reading room would serve as 'flexible space' for dinners and other special events.

The high ceilings would be retained in both reading rooms. The current stacks would be converted to gallery, office and work space, including a new mezzanine level. Based on the feasibility study, the two-story addition would include a ground-floor auditorium and temporary exhibit space, and galleries on the second floor. The large murals in both second floor reading rooms and on the walls of the second-floor balcony on either side of the processional stairway would likely be moved, according to the museum's current plans./2/

An alternative design for the Asian Art Museum would not include construction of the addition at 45 Hyde Street. With this plan, additional gallery space would be created in the south (Fulton Street) reading room and in a partial mezzanine constructed within this room. The decorative ceiling would remain visible from both the second floor and the new mezzanine, but the overall effect would be to eliminate the high ceiling in most of this large interior space. Exterior alterations to the existing building would be the same. Although no formal design of the proposed addition at 45 Hyde Street has been completed, the EIR examines the addition for purposes of a conservative analysis of architectural, cultural, transportation, shadow, wind, and construction noise impacts. Remodeling for the Asian Art Museum without the Hyde Street addition would have less impact than described in this document, except for the interior changes described above here.

The 100 Larkin Street office building would be demolished for construction of the New Main Library.

The Pioneer Monument would be relocated within the Civic Center, in some proximity to City Hall. Among the sites under consideration is the Fulton Street Mall, following erection of the New Main Library and renovation of the existing library building for the Asian Art Museum. This location would place the monument on an imaginary line drawn through the center of City Hall, establishing at a greater distance the relation between the monument and City Hall that existed prior to 1906, when the monument stood directly in front of Old City Hall. Other locations under consideration include the Market Street end of United Nations Plaza, also on axis with City Hall; the south side of Civic Center Plaza, between the existing fountain and Civic Auditorium; the northwest corner of Marshall Square (near the intersection of Fulton and Larkin Streets); and directly in front of City Hall, in place of the existing reflecting pool in Civic Center Plaza. Moving the monument would eliminate the last remaining marker of the pre-1906 City Hall and street grid.

Relocation of the monument would require that it be dismantled. It is expected that the monument could be moved without damage./3/

A feasibility study has been prepared to assess the proposed relocation of the monument. Among the issues examined are conditions including underground structures at each of the potential relocation sites, the necessity for underpinning, the composition of the monument, and methods of disassembly and assembly./4/

According to the feasibility study, relocation of the monument would require that it be dismantled. The statues would be removed from the central granite pedestal and from each of the four surrounding granite piers. The column and the piers would be marked and disassembled into several pieces; the pieces would be reassembled at the site chosen for relocation. This work could take two to four months and would be preceded by some months of engineering design. The study notes that care would be required not to damage the monument during relocation, and states "the monument does not appear to be overly fragile."/4/

The Library Foundation, a private organization, would have primary responsibility for funding relocation of the monument; $750,000 has been allocated for the move and associated engineering./3/ Whether the monument would need to be stored after dismantling and before reinstallation would depend on the relocation process and the site chosen./3/

See Chapter VII. Alternatives, pp. 187 - 209, for discussion of retaining the monument in place, of moving it, and of storing it; the five locations are discussed there and are illustrated in Figure 37, p. 194.

CULTURAL RESOURCES

An archaeological resources report was prepared for the project site and vicinity./5/

The New Main Library would include excavation to a depth of between about 30 feet and 35 feet below existing grade due to the slope of the site and to deeper excavation for the loading area. This excavation would go below the depth at which bodies were interred in the former Yerba Buena Cemetery; excavation would be below the foundation levels of Old City Hall. It is possible that excavation could disturb soils not exposed during use of the site as a cemetery or during construction of the Old City Hall.

Expansion of the Asian Art Museum would include excavation to about 17 feet below grade around the perimeter of the existing Main Library and at the site of the 45 Hyde Street building. This could disturb soils not exposed by previous activity on the site during the past 150 years.

Prehistoric Resources

Available documentary evidence suggests that there is a possibility that prehistoric / protohistoric archaeological remains may exist on the project site. Early maps and oral accounts of San Francisco indicate that the project site and its immediate surroundings could have represented a favorable habitat for Native American hunters and gatherers. One of the prehistoric sites recently discovered in downtown San Francisco was situated in a natural setting much like that of the present project area. This site, the Market Street Shell Midden, CA-SFr-113, was discovered in 1986 at the intersection of Fifth and Market Streets./6/ In addition, and closer to the site, a partial skeleton was discovered in 1969 about 75 feet below present grade during excavation for the BART Civic Center Station. The bones, of a Native American woman, were estimated to date to 2950 ± 250 years B.C., the oldest radiocarbon date in central California for human remains. Analysis of these prehistoric deposits suggests the possibility that similar prehistoric cultural materials may exist within, or adjacent to, the New Library block and the Asian Art Museum block.

Historic Resources

Available evidence suggests that there is little likelihood of encountering cultural resources from the Spanish, Mexican or Early American eras (1776-1848) within the confines of the project site.

There is a possibility of encountering cultural materials dating from as early as 1850. The project site was the location of Yerba Buena Cemetery, San Francisco's first official cemetery. Although human remains from this site were exhumed and reburied elsewhere within the city, it is possible that human remains from the cemetery may still exist on the New Main Library block or the Asian Art Museum block. As noted in Chapter III. Setting, human remains were located during construction of Old City Hall

and the Old Federal Building and, more recently, during work in an elevator pit at the existing Main Library; all three of these discoveries were on the site of the former cemetery.

In addition to the possibility of encountering human remains from the Yerba Buena Cemetery, it is also possible that architectural remains and/or related cultural features from Old City Hall may exist at the proposed New Main Library and Asian Art Museum expansion sites. Portions of the foundation of Old City Hall, with foundation walls up to 13 feet wide, could be beneath both the New Library block and the Asian Art Museum block. Artifacts from the building, which was destroyed in the 1906 Earthquake and Fire, could be uncovered by excavation for the New Main Library or the proposed addition for the Asian Art Museum. In addition, a time capsule buried at the start of construction of the Pioneer Monument could be located during excavation near the monument, or during relocation.

NOTES - Architectural, Historic and Cultural Resources

/1/ William Turnbull Associates, *Asian Art Museum - Main Public Library Building: A Feasibility Study*, April 1988.

/2/ Teichman, Judith, Project Manager, Asian at the Civic Center, written communication, June 12, 1991 and telephone conversation, October 4, 1991.

/3/ Abel, Russell, Project Manager for San Francisco New Main Library, Bureau of Architecture, telephone conversations, June 26, October 11 and 31, 1991.

/4/ O'Brien-Kreitzberg & Associates, Inc., Preliminary feasibility study for relocation of Pioneer Monument, October 1991.

/5/ Pastron, Allen, Ph.D., Archeo-Tec Inc., Archival Cultural Resources Evaluation of the Proposed Main Library Development Project and Two Affiliated Parcels in the Civic Center Plaza Area, San Francisco, California, November 1990. This report is on file and available for public review at the Department of City Planning, 450 McAllister Street, San Francisco.

/6/ Pastron, Allen, Ph.D., Archeo-Tec Inc., Archival Cultural Resources Evaluation of the Proposed Costco Development Project, San Francisco, California, February 1990. This report is on file and available for public review at the Department of City Planning, 450 McAllister Street, San Francisco.

B. URBAN DESIGN AND VISUAL QUALITY

The project would include demolition of buildings at 45 Hyde Street and 100 Larkin Street. The existing Main Library building would be seismically strengthened and remodeled to contain the Asian Art Museum, and a two-story addition to the northeast portion of the existing library building would replace the 45 Hyde Street structure.

The project would construct a New Main Library on Marshall Square. The building would be about 80 feet tall, like the existing library, and would be finished in granite similar to that used on the existing library and other Civic Center structures.

The New Main Library would have two primary design components: Beaux Arts treatment of the Larkin and Fulton Street facades of the building, and contemporary facades on the Grove and Hyde Street sides.

Viewed from the west, the New Main Library is intended to complement the existing library building (Asian Art Museum), (see Figures 16 through 19, pp. 88 - 91). Windows on the Larkin and Fulton Street sides would be of similar size and configuration to those in the existing library building. These new facades would have projecting windows in rectangular frames, while the existing library has recessed windows within arched frames. The new library would include metal grilles, covering some of its windows, similar to the window treatment of the existing building.

The Larkin Street facades of the two structures would be similar, of Beaux Arts style, with five windows over three entryways and projecting end bays with one vertical window in each. On Fulton Street, where the two buildings would face each other, the New Main Library would have 13 windows between end bays, as does the existing library. Each bay would have a rectangular window. The east end of the new library's Fulton Street side has been designed in a contemporary, unembellished style, with similar materials, primarily granite, intended as a transition between the Beaux Arts north and west sides of the building and the modern east and south facades. A transitional glass and stone recess would join the Beaux Arts and contemporary facades at both the Fulton Street / Hyde Street and Larkin Street / Grove Street corners (see Figures 20 through 23, pp. 92 - 95).

The contemporary Hyde Street and Grove Street facades would consist of granite walls with large punched windows recessed from the wall surface (see Figures 24 through 27, pp. 96 - 99). This part of the building would include a three-story rectangular

SOURCE: Environmental Science Associates, Inc.

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

SF Main Library ■

Figure 16

View of Site Looking East across Civic Center Plaza from City Hall Steps

SOURCE: Pei Cobb Freed & Partners

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

SF Main Library ■

Figure 17
Photomontage:
View East across Civic Center Plaza

SF Main Library ■

SOURCE: Environmental Science Associates, Inc.

Figure 18
View of Site Looking
Southeast from Larkin and McAllister Streets

Note. These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

SOURCE: Pei Cobb Freed & Partners

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 19
Photomontage:
View Southeast from Larkin and McAllister Streets

SF Main Library ■

SOURCE: Environmental Science Associates, Inc.

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 20
View of Site Looking
Southwest from United Nations Plaza

SOURCE: Pei Cobb Freed & Partners

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

SF Main Library ■

Figure 21
Photomontage:
View Southwest from United Nations Plaza

SF Main Library ■

SOURCE: Environmental Science Associates, Inc.

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 22
View of Site Looking
Northeast from Larkin and Grove Streets

SOURCE: Pei Cobb Freed & Partners

SF Main Library ■

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 23
Photomontage:
View Northeast from Larkin and Grove Streets

SOURCE: Environmental Science Associates, Inc.

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 24
View of Site Looking
Northwest from Eighth and Market Streets

SOURCE: Pei Cobb Freed & Partners

SF Main Library ■

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 25
Photomontage:
View Northwest from Eighth and Market Streets

SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure 26

View of Site Looking
South from Hyde Street Near Fulton Street

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

SOURCE: Pei Cobb Freed & Partners

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface

SF Main Library ■

Figure 27
Photomontage:
View South from Hyde Street Near Fulton Street

element set off from square by about 30 degrees, parallel to Market Street. This element would carry through all floors of the building and would encompass the auditorium on the basement level, a portion of the children's collection, four floors of compact book stacks, and the San Francisco History Room, on the fifth floor. A corner setback at Hyde and Grove Streets would begin about 10 feet above street level and would contain an outdoor children's terrace accessible from The Children's Library.

The new building would be similar in major dimensions to the existing library, the old Federal Building, the old State Building, and other government structures in the Civic Center. The new building would have equal setbacks from Larkin Street and Fulton Street as the existing library.

Renovation of the existing library would not change views from the New Main Library site (see Architectural, Historic and Cultural Resources section, pp. 81 - 86, for a discussion of the proposed exterior changes to that building). The view of the Hyde Street side of the existing library would be altered by construction of the two-story addition. This addition would retain the cornice line of the existing structure and use exterior materials similar in appearance and intended to be compatible with the existing library building./1/

Construction of the New Main Library would block views of City Hall from the intersection of Hyde, Eighth and Market Streets (see Figure 25, p. 97). Views of City Hall would still be available from U.N. Plaza and from the Fulton Street Mall, with the project. (see Figure 21, p. 93). The New Main Library would emphasize the visual corridor to City Hall along Fulton Street from Market Street by forming a frame, with the existing library, of City Hall viewed from the east, and blocking existing views of City Hall from the east and south.

The New Main Library would provide new public views of Civic Center Plaza and its buildings from different levels on the Larkin and Fulton Street sides compared with views now available from the site./2/

Regarding long-range views of the Civic Center, from places where the New Main Library would be visible it would appear as part of the group of monumental structures in the Civic Center.

NOTES - Urban Design and Visual Quality

/1/ No photomontage analysis has been prepared for the proposed addition to the existing library building because design work has not been completed.

/2/ Abel, Russell, Project Manager for San Francisco Main Library, Bureau of Architecture, oral communication, July 17, 1991.

C. SHADOW AND WIND

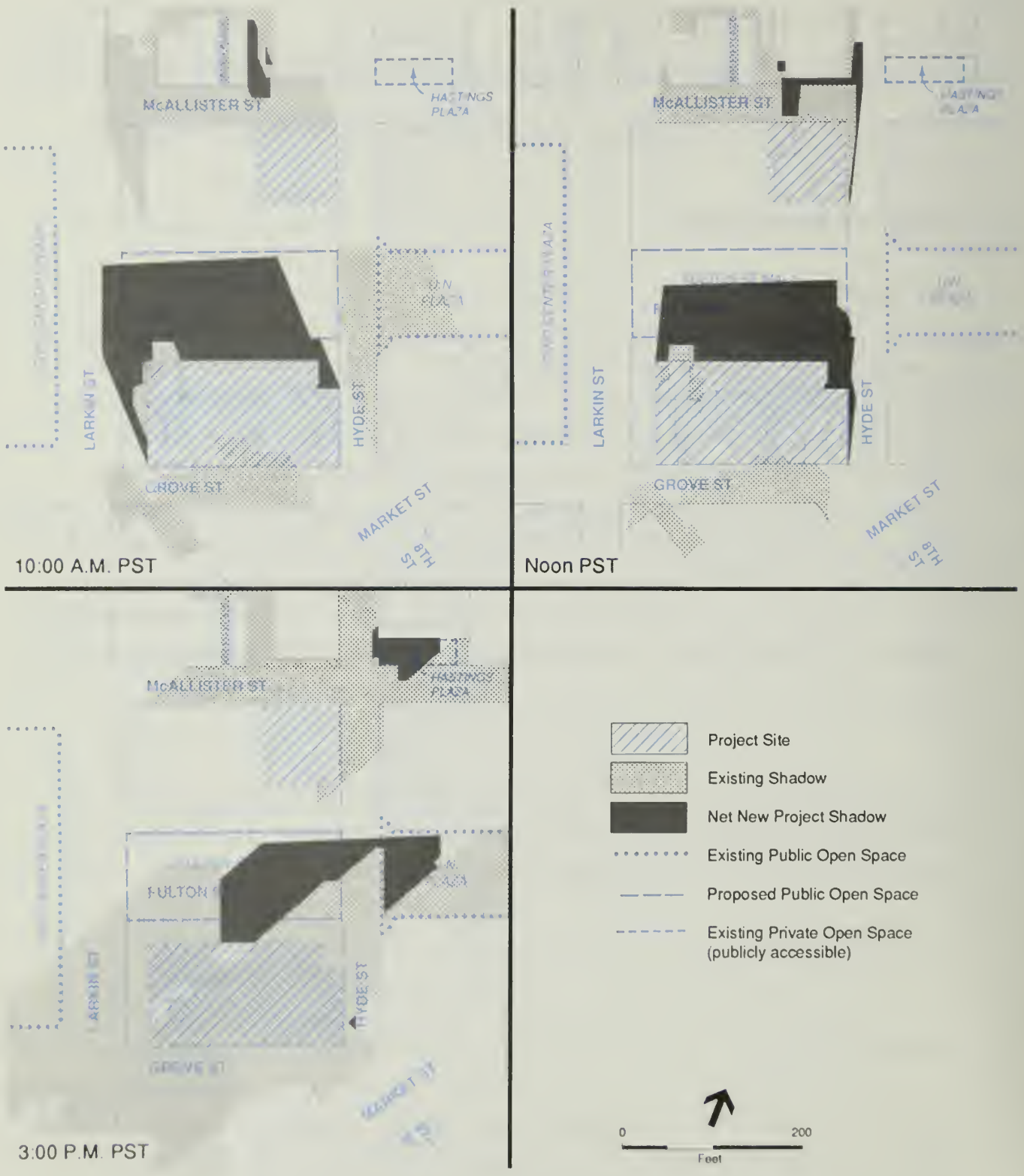
SHADOW

Open space in the project vicinity includes Civic Center Plaza, across Larkin Street to the west of the project site, and United Nations Plaza, east of the project site (occupying the Fulton Street right-of-way between Hyde and Market Streets and the Leavenworth Street right-of-way between McAllister and Market Streets). Fulton Street between Larkin and Hyde Streets, the site of the proposed Fulton Street Mall, is also designated for open space in the City Planning Code, although it is a public street with on-street parking. Other open areas include the eastern portion of Fox Plaza at Market and Hayes Streets and the plaza in front of Hastings College of the Law at 198 McAllister Street at Hyde Street, diagonally across the intersection from the existing Main Library and 45 Hyde Street. In the project vicinity, Civic Center Plaza is the only park protected by the Sunlight Ordinance (Section 295 of the City Planning Code).

Existing open space on the project site includes the landscaped areas around the 100 Larkin Street building and the existing Main Library. The existing landscaped area around the 100 Larkin Street building would be eliminated with the project.

The proposed addition to the existing library (at 45 Hyde Street) represents a conservatively large building envelope, the same height as the existing building built to the property line along McAllister and Hyde Streets. No design is yet available for this addition./1/

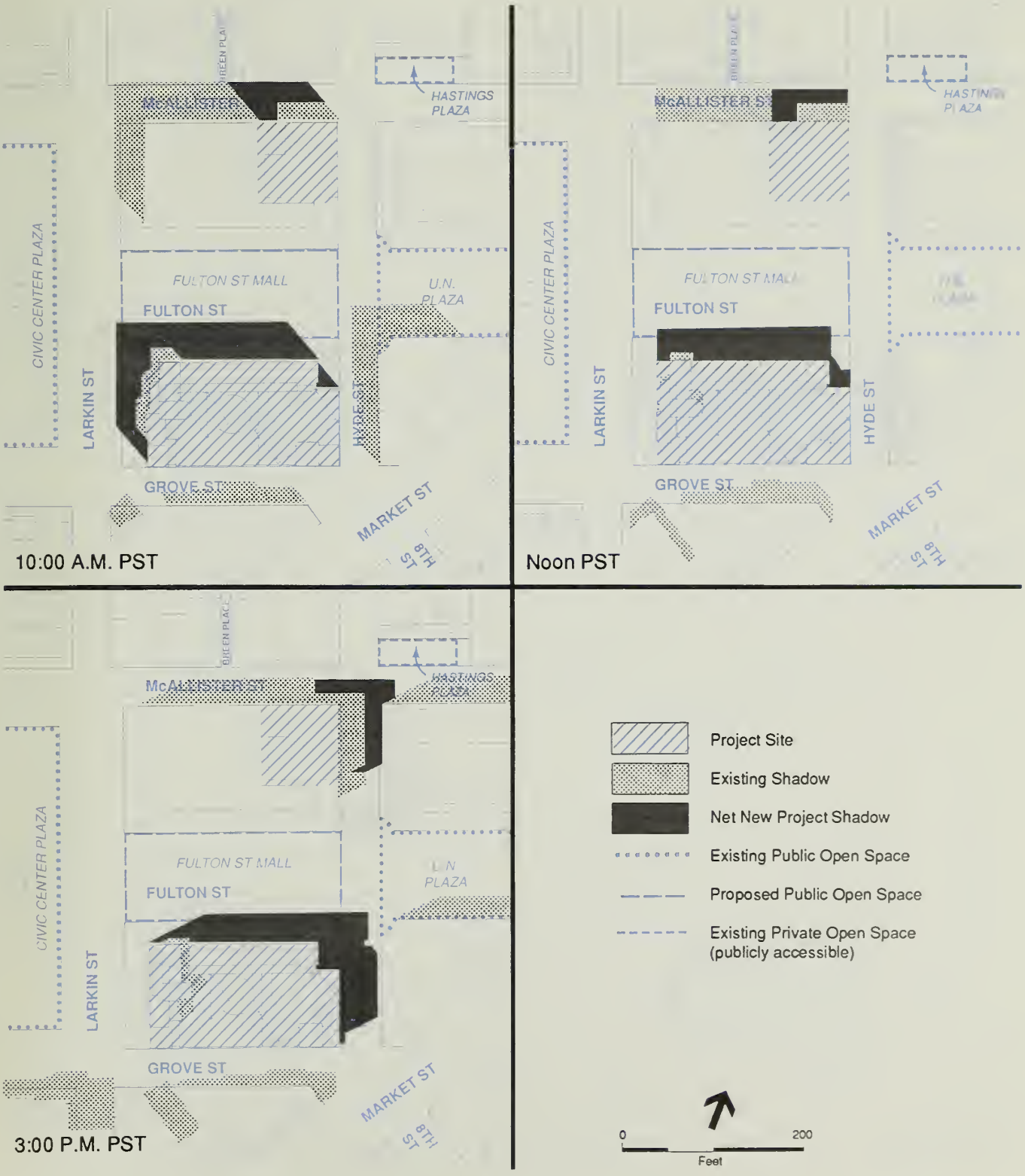
Shadow patterns for existing buildings in the project area (including the existing 100 Larkin Street building) and for the proposed project (the New Main Library and a schematic design for the Asian Art Museum's proposed addition to the existing library) are shown for 10:00 a.m., noon and 3:00 p.m. for the four seasons: during winter and summer solstices, when the sun is at its lowest and highest, and during the spring and fall equinoxes, when the sun is at its midpoint (see Figures 28 to 31, pp. 102 to 105). Conditions from June 21 through December 21 mirror the conditions from



SOURCE: Environmental Science Associates, Inc

SF Main Library ■

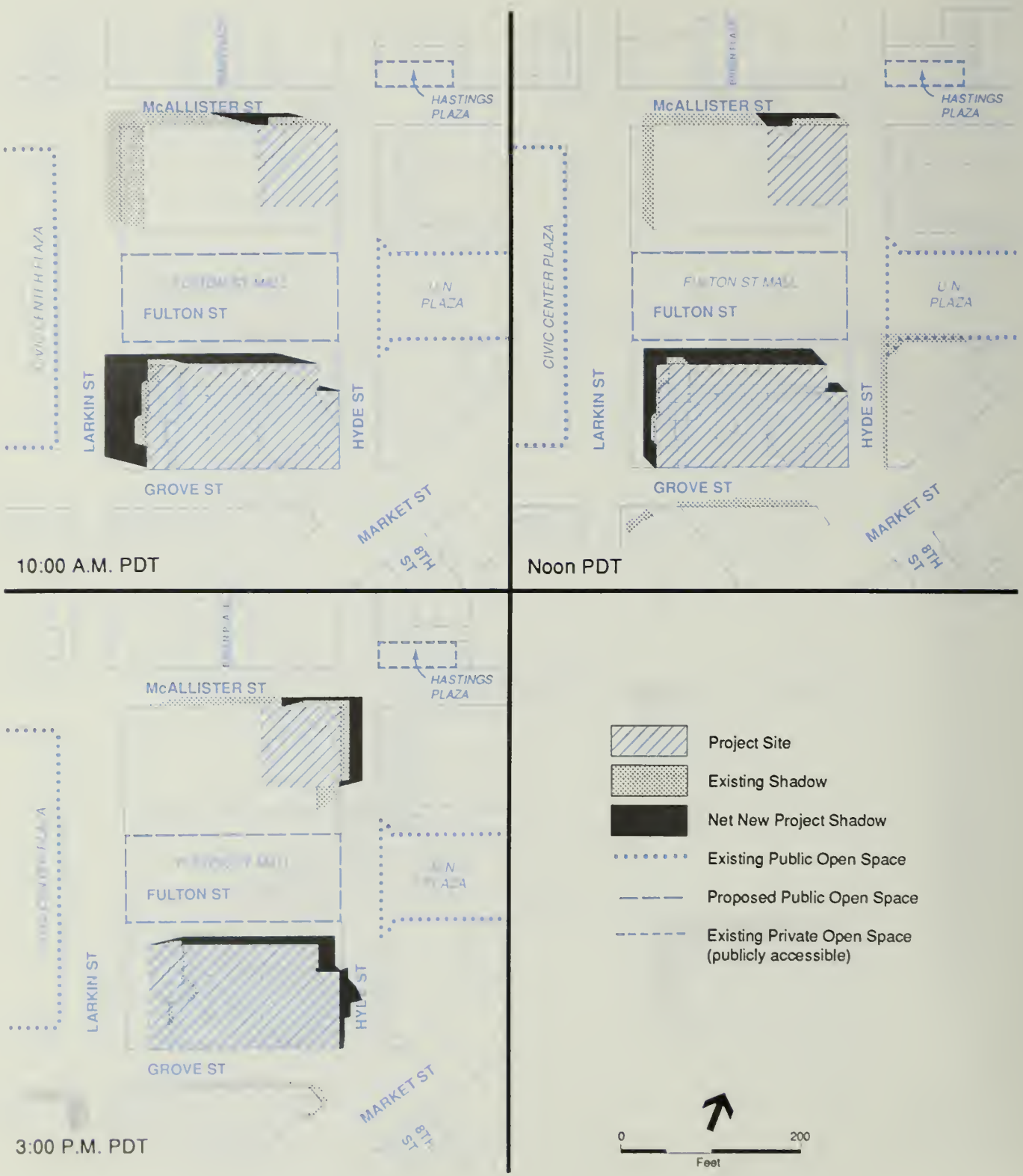
Figure 28
Project Shadow Pattern
December 21



SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

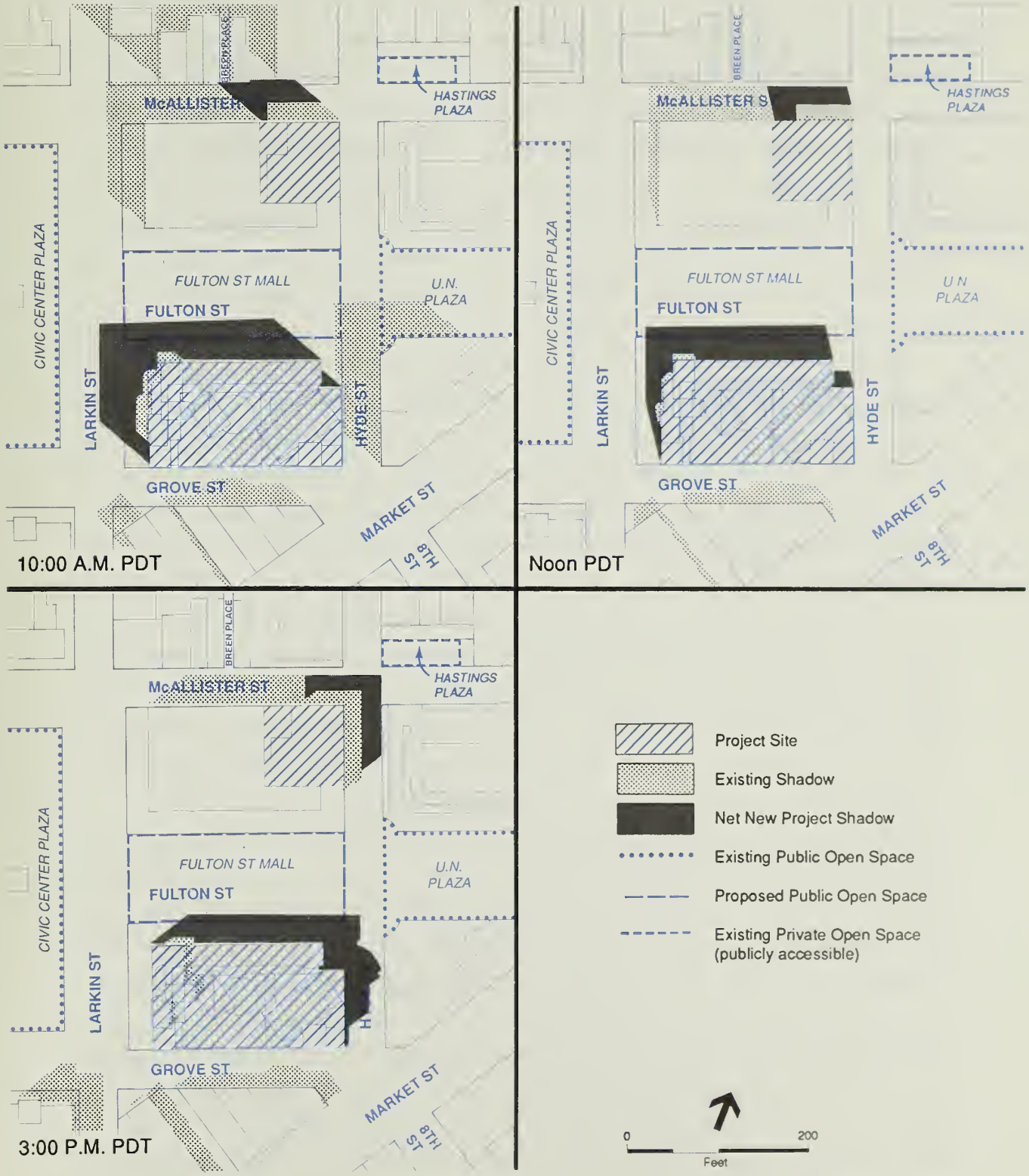
Figure 29
Project Shadow Pattern
March 21



SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure 30
Project Shadow Pattern
June 21



SF Main Library ■

SOURCE: Environmental Science Associates, Inc.

Figure 31
Project Shadow Pattern
September 21

December 21 through June 21 (using solar time). The analysis includes shadows cast on streets, sidewalks, pedestrian areas, and open spaces in the area potentially affected by the New Main Library and the addition to the existing library. Shadow outlines of these new structures as though cast on the ground, without intervening buildings, are also shown to illustrate the scale of the project shadow in relation to the shadows cast by structures that would surround it. Figures 28 to 31 show existing building shadow and net new shadow due to the project. Fulton Street between Larkin and Hyde Streets is referred to as the Fulton Street Mall in the following discussion, to assess impacts on it as an open space.

December 21 (PST)

At 10:00 a.m. Pacific Standard Time (PST) on December 21 (see Figure 28, p. 102), the New Main Library would add new shadow to the sidewalks along the east side of Larkin Street and the south side of Fulton Street, as well as to the open space setback areas along these sides of the proposed library building. New shadow would extend into Larkin Street, would shade most of the Fulton Street Mall, and would shade about half of the notch in the new library building at Hyde and Fulton Streets. At noon, new shadow would cover most of the south sidewalk of Fulton Street and the open space on the Fulton Street side of the new library. Shadow would extend more than halfway across the Fulton Street Mall and would shade portions of the west sidewalk of Hyde Street (including all of the Hyde Street / Fulton Street notch). At 3:00 p.m., new shadow would cover most of the eastern half of the Fulton Street Mall, extending in a strip across Hyde Street, onto most of the western, currently unshaded, portion of U.N. Plaza. Existing buildings, including Fox Plaza and the CSAA building at 100 Van Ness, now shade Hyde Street and most of U.N. Plaza at this time. No new shadow would reach Civic Center Plaza at 10:00 a.m., noon, or 3:00 p.m.

The Asian Art Museum addition to the existing library (the Museum addition) would add new shadow to McAllister Street at 10:00 a.m., completing the shading of the street and sidewalks in the block adjacent to the existing Main Library. At noon, the Museum addition would add new shadow to McAllister Street and its north sidewalk, including the covered entrance in front of Hastings College of the Law at the northwest corner of Hyde and McAllister Streets (200 McAllister building), as well

as the west side of the Hyde Street sidewalk there. At 3:00 p.m., the Museum addition would cast new shadow across the McAllister Street / Hyde Street intersection, covering nearly the entire open elevated plaza in front of the Hastings College building at 198 McAllister Street at the northeast corner of this intersection. New shadow would shade most of the sidewalks on both sides of this plaza.

March 21 (PST)

At 10:00 a.m. Pacific Standard Time (PST) on March 21 (see Figure 29, p. 103), the New Main Library would add new shadow to the sidewalks along the east side of Larkin Street and the south side of Fulton Street, as well as to the open space setback areas along these sides of the proposed library building. New shadow would extend into the Fulton Street Mall and into a portion of the notch in the new library building at Hyde and Fulton Streets. At noon, new shadow would cover the open space setback on the Fulton Street side of the new library, most of the south sidewalk of Fulton Street, and the eastern edge of the Fulton Street Mall. New shadow would cover most of the Hyde Street / Fulton Street notch. At 3:00 p.m., new shadow would cover most of the south sidewalk of Fulton Street and would reach the Fulton Street Mall. New shadow would cover the west sidewalk of Hyde Street (including the Hyde Street / Fulton Street notch) and would extend across the street to the Orpheum Theater, covering most of the east sidewalk. No new shadow would reach Civic Center Plaza at 10:00 a.m., noon, or 3:00 p.m.

The Museum addition would add new shadow to McAllister Street and a section of the south sidewalk at 10:00 a.m. At noon, it would add new shadow to McAllister Street and its north sidewalk, but would not extend to the plaza in front of the Hastings 200 McAllister building. There would also be new shadow cast on the south sidewalk of McAllister Street adjacent to the existing parking area. At 3:00 p.m., the Museum addition would cast new shadow onto the McAllister Street / Hyde Street intersection and onto Hyde Street and its east sidewalk. No new shadow would reach the Hastings Plaza or the other open spaces at 10:00 a.m., noon, or 3:00 p.m.

June 21 (PDT)

At 10:00 a.m. Pacific Daylight Time (PDT) on June 21 (see Figure 30, p. 104), the New Main Library would newly shade Larkin Street and add new shadow to the

sidewalk along the east side of Larkin Street, as well as to the open space setback areas along the Larkin Street and Fulton Street sides of the proposed library building. New shadow would reach the notch in the building at Hyde and Fulton Streets. At noon, new shadow would cover portions of the open space setback areas on the Larkin and Fulton Street sides of the building. Shadow would cover a portion of the Hyde Street / Fulton Street notch. At 3:00 p.m., new shadow would cover a portion of the Fulton Street setback of the new library, would cover part of the west sidewalk of Hyde Street (including the Hyde Street / Fulton Street notch) and would extend part of the way across Hyde Street. No new shadow would reach Civic Center Plaza at 10:00 a.m., noon, or 3:00 p.m.

The Museum addition would add new shadow to a strip of McAllister Street and a section of the south sidewalk at 10:00 a.m. At noon, it would add new shadow to McAllister Street and the south sidewalk adjacent to the existing parking area. At 3:00 p.m., the Museum addition would cast new shadow onto portions of McAllister and Hyde Streets and a section of the south sidewalk of McAllister Street. No new shadow would reach Hastings Plaza or the other open spaces at 10:00 a.m., noon, or 3:00 p.m..

September 21 (PDT)

At 10:00 a.m. Pacific Daylight Time (PDT) on September 21 (see Figure 31, p. 105), the New Main Library would add new shadow to the sidewalks along the east side of Larkin Street and the south side of Fulton Street, as well as to the open space setbacks along these sides of the proposed library. New shadow would extend into both Larkin Street and the Fulton Street Mall, and would cover part of the Hyde Street / Fulton Street notch. At noon, new shadow would cover a portion of the open space setback on the Larkin Street side of the building and would cover most of the south sidewalk of Fulton Street and extend into the Fulton Street Mall, as well as cover most of the open space setback on this side of the building. Shadow would cover most of the notch in the new library building. At 3:00 p.m., new shadow would cover most of the open space setback on the Fulton Street side of the new library, most of the south sidewalk on Fulton Street, and reach the Fulton Street Mall. New shadow would cover the west sidewalk of Hyde Street (including the Hyde Street / Fulton Street notch) and would extend part of the way across Hyde Street. No new shadow would reach Civic Center Plaza at 10:00 a.m., noon, or 3:00 p.m.

The Museum addition would add new shadow to McAllister Street, a section of the south sidewalk, and part of the north sidewalk, resulting in nearly complete shading on the block of McAllister Street adjacent to the existing library, at 10:00 a.m. At noon, the Museum addition would add new shadow to McAllister Street and the south sidewalk adjacent to the existing parking area and could extend to the north sidewalk. At 3:00 p.m., the Museum addition would cast new shadow onto the McAllister Street / Hyde Street intersection and onto portions of McAllister and Hyde Streets. No new shadow would reach the Hastings Plaza or the other open spaces at 10:00 a.m., noon, or 3:00 p.m.

Open Space

The shadow studies show that the New Main Library would add new shadow to Civic Center Plaza in the morning and to United Nations Plaza in the afternoon hours. The building would add shadow to the proposed Fulton Street Mall throughout the day. The proposed Asian Art Museum addition to the existing Main Library would not cast additional shadows on or newly shade any of these three public open spaces. It would add new shadow on the elevated plaza in front of the Hastings College of the Law building at 198 McAllister Street, as discussed above. United Nations Plaza and Hastings Plaza are shown in Figure 32. The area of the proposed Fulton Street Mall is shown in Figure 13, p. 60. Civic Center Plaza is shown in Figure 16, p. 88. Shadow impacts on these public open spaces are discussed in more detail below.

Civic Center Plaza

Shadows from the new library on Civic Center Plaza would be generally similar to shadows cast by the existing library building in overall coverage and duration (although they would be cast further to the south), with the greatest effect on the plaza in the early mornings throughout the year. At approximately one hour after sunrise year-round (from 7:00 a.m. in June to 8:30 a.m. in December), maximum new shadows cast by the New Main Library would cover up to approximately 30 percent of the plaza, at which time existing buildings shade up to approximately an additional 15 percent of the plaza./2/ The extent of project shadow coverage would decrease over a period of about one-and-one-half hours, leaving the plaza by 8:30 a.m. in June and by 9:30 a.m. in December.

United Nations Plaza

Hastings Plaza

SOURCE: Environmental Science Associates, Inc

SF Main Library ■

Figure 32
United Nations Plaza and
Hastings Plaza Open Spaces

Fulton Street Mall

Because the proposed Fulton Street Mall would be immediately north of the project, shadows from the proposed New Main Library would reach the proposed Mall from the end of August through April. In April and late August, the project would cast shadows on the Fulton Street Mall, with coverage up to a maximum of about 10 percent during the middle of the day, with no existing shadow. In March and September, the project shadows would cover a maximum of about 15 percent of the mall during the middle of the day, while existing buildings shade approximately 25 percent. At noon in both March and September, new project shadows would cover approximately 10 percent of the mall, while existing buildings do not contribute to this coverage. The greatest coverage would occur from October to February, when, in early morning, project shadows would increase the existing shadow coverage, which is about 50 percent of the Fulton Street Mall, to near complete shading. At noon during these months, while existing buildings do not shade the mall, new shadow from the New Main Library would cover from about 25 percent to about 50 percent of the mall, with the maximum occurring in December. By late afternoon, new shadow would diminish to approximately one-fourth coverage of the mall, while existing buildings shade approximately one-half.

United Nations Plaza

Project shadows would reach the United Nations Plaza in the afternoon hours from late September through March. Shadows from existing buildings occur during all times when project shadows would reach the plaza; the project would add to the total shadow coverage. Project shadow would typically reach the plaza at around 2:00 p.m. to 3:00 p.m. (times when existing shadows cover one-fourth to one-half of the plaza), and would reach its maximum coverage at around 4:00 p.m. The maximum extent of new shadow coverage would occur in late afternoon in December, when project shadows would increase the existing approximate 65 percent coverage to complete coverage of the plaza.

Hastings Plaza

The proposed Asian Art Museum addition to the existing Main Library building would add new shadow to the Hastings Plaza in the afternoon during the months of October through February. Project shadows would typically reach the plaza at around 1:30 p.m. to 3:00 p.m. The maximum extent of new shadow coverage would occur after 3:00 p.m. during October through March, reaching a maximum coverage of about

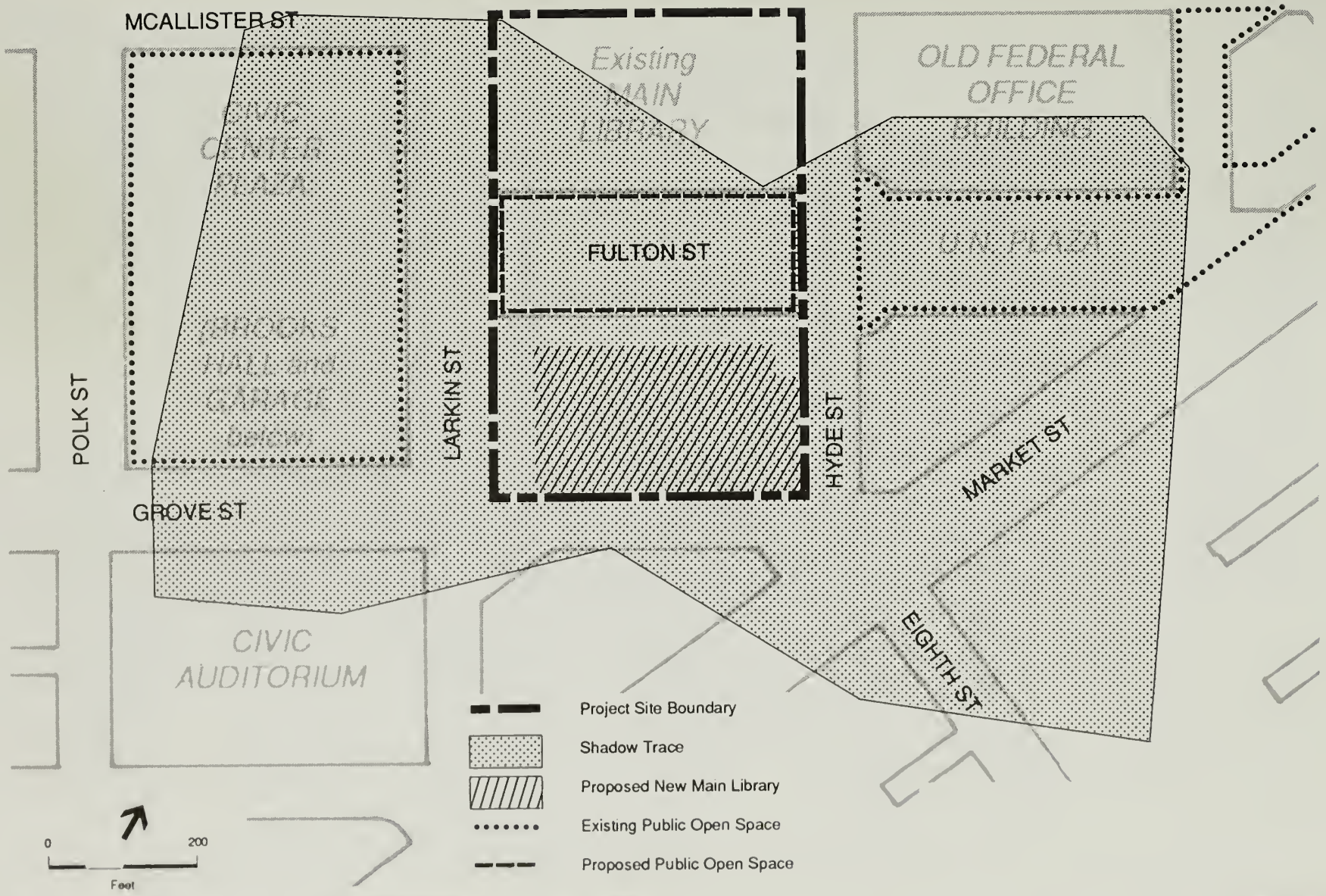
85 percent at a time when existing shadow would cover the remainder. By late afternoon during those months, the existing Main Library would shade most of the plaza; the addition would not create new shadow.

The Sunlight Ordinance

In June 1984, the voters of the City and County of San Francisco approved Proposition K, the Sunlight Ordinance (City Planning Code Section 295) prohibiting the issuance of building permits for structures that would shade property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission unless the City Planning and Recreation and Park Commissions determine that such shade would have an insignificant adverse impact on the use of such property.

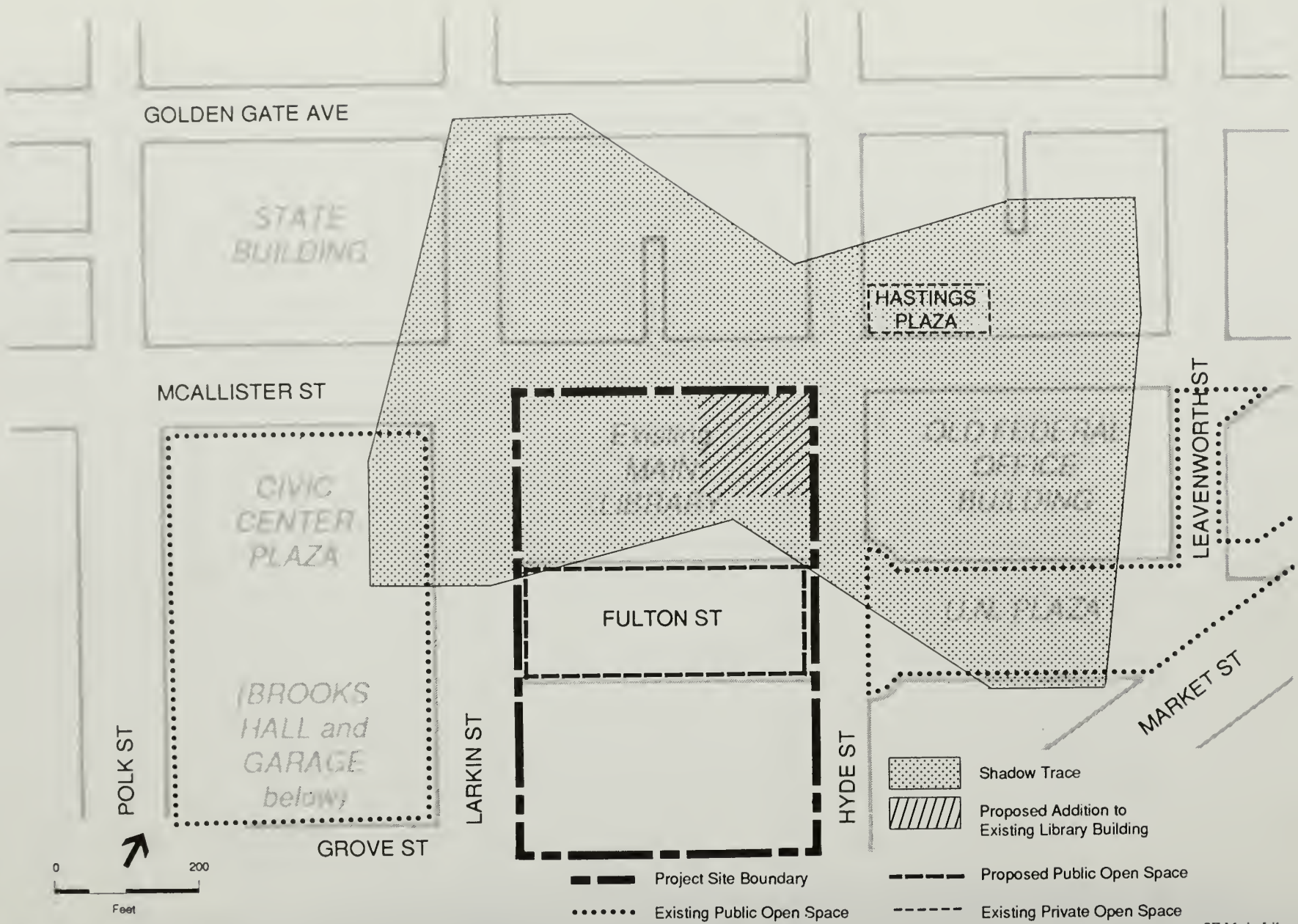
In February 1989, the City Planning and Recreation and Park Commissions adopted shadow criteria for all 15 parks in the Greater Downtown Area. These districts have the greatest potential for new shadow on parks because of the permitted height limits. The commissions: 1) set an Absolute Cumulative Limit for new shadow for each open space; 2) (where new shadow is allowable): projected individual building impacts and allocated a portion of the additional allowable shadow among specific projects, within the Absolute Cumulative Limit; and 3) set forth qualitative criteria for new shadow. The Absolute Cumulative Limit for Civic Center Plaza is one percent additional shadow-foot-hours per year. This Absolute Cumulative Limit anticipated and provided for a New Main Library approximately 80 feet in height with full site coverage on the Marshall Square site. The shadow cast by the proposed New Main Library, which would be set back on Larkin and Fulton Streets, as discussed on p. 109, would not exceed that limit./3/ New shadow from the Asian Art Museum addition would not shade Civic Center Plaza at anytime of the year due to intervening buildings.

Figure 33 shows the maximum extent of shadow generated by the proposed New Main Library as though cast on the ground without intervening structures. This shadow trace includes all areas that could be shaded by the New Main Library during the hours when the Sunlight Ordinance applies: between one hour after sunrise and one hour before sunset, year round. The shadows of greatest length (i.e., those which extend across much of Civic Center Plaza and United Nations Plaza) would occur when the sun was relatively low in the sky, during early morning and late afternoon hours. Figure 34, p. 114, similarly shows the shadow trace for the proposed addition to the existing library building.



SOURCE: San Francisco Department of City Planning

Figure 33
Year-Round Shadow Trace
for New Main Library



SF Main Library ■

SOURCE: San Francisco Department of City Planning

Figure 34
Year-Round Shadow Trace for the Addition to Existing Library

NOTES - Shadow

/1/ Based on William Turnbull Associates, *Asian Art Museum - Main Public Library Building: A Feasibility Study*, April 1988.

/2/ Sunrise occurs at approximately 6:00 a.m. PDT in June and 7:30 a.m. PST in December.

/3/ Ahmadi, Rana, Planner, San Francisco Department of City Planning, telephone conversation, October 11, 1991.

WIND/1/

The City Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 (Downtown Commercial) Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10 percent of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the City Planning Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single full hour of the year, or 0.01% of the time. The wind ordinance is defined in terms of equivalent wind speed, an average wind speed (mean velocity) adjusted to include the level of gustiness and turbulence./2/ The project site is located in a Public Use (P) District in which the City Planning Code wind requirements do not apply. For the purposes of this analysis, however, the project is examined in relation to the 7 mph and 11 mph comfort criteria and the 26 mph hazard criterion.

Wind-tunnel tests were conducted for the project setting in its existing condition; the project (New Main Library and addition to existing library) in the existing setting (existing plus project conditions); and the project and potential development in the existing setting (project plus potential development). Forty-three test locations were studied for these three scenarios for the four prevailing wind directions: northwest, west-northwest, west, and southwest. These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation of the proposed building. All measurements were taken at the same series of surface points around the project site for all test configurations and wind directions included in testing. (See pp. A.48 and A.49)

Twelve of the forty-three test locations corresponded to representative outdoor seating locations: five locations in or near Civic Center Plaza (test locations 10, 11, 12, 16,

and 17); five locations in United Nations Plaza (test locations 8, 9, 15, 21, and 22); and two locations on Fulton Street (test locations 13 and 14) between Hyde and Larkin Streets (the site of the proposed Fulton Street Mall). The remaining test locations are considered pedestrian areas.

The locations of the measurement points and the results of the wind-tunnel study for compliance with the comfort and hazard criteria are summarized in Appendix C, Figure C-1, p.A.48, and Table C-1, p.A.49./3/ Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time, and about 0.01% of the time when referring to the hazard criterion.

The existing wind environment in the site vicinity is considered relatively windy, with every measured existing seating location (12 locations) exceeding the 7-mph outdoor seating criterion, and 29 of the 43 test locations exceeding the 11-mph pedestrian-comfort criterion, including 9 of the locations that also exceed the 7 mph criterion. Wind speeds in Civic Center Plaza, United Nations Plaza and Fulton Street (the proposed mall) seating areas range from 8 to 17 mph, while wind speeds in pedestrian areas range from 7 to 21 mph. Sidewalk locations on Market Street at Hayes and Polk Streets, at Fox Plaza, (test locations 38, 41 and 42) exceed the 26-mph hazard criterion for more than one hour per year. Wind speeds at the Eighth and Market Streets intersection range from 10 to 17 mph. Generally, existing wind speeds around the perimeter of the New Main Library site, occupied by the 100 Larkin Street building, range from 7 to 16 mph.

Project Impacts

The project wind environment would be about the same or slightly improved, overall, compared with existing conditions. Wind speeds would generally change by one to two mph with the project. The project would cause two new exceedences of the 11-mph pedestrian criterion, would increase winds at one location by 4 mph, and would decrease winds at four locations by 4 to 6 mph. The new exceedences would occur in United Nations Plaza at the southeast corner of the old Federal Building (an increase from 11 to 12 mph) and at the northeast corner of the Civic Auditorium (an increase from 11 to 13 mph). At the northeast corner of the New Main Library, wind speeds would increase from 13 to 17 mph.

Compared with existing conditions, wind speeds with the project in place would decrease at 17 locations, increase at 8 locations, and remain the same at 18 locations. Winds in the seating areas of Civic Center Plaza, United Nations Plaza, and the proposed Fulton Street Mall would continue to exceed the 7-mph seating criterion; however, the percentage of time the criterion was exceeded would decrease at 10 of the 12 representative seating locations studied. Wind speeds in the pedestrian areas would range from 6 to 21 mph, compared to 7 to 21 mph with existing conditions. The three sidewalk locations on Market Street at Hayes and Polk Streets would continue to exceed 26 mph for more than one hour per year.

Generally, wind speeds around the proposed New Main Library site would range from 9 to 17 mph. Two locations on Grove Street and three locations east of the New Library block along Hyde Street would decrease to meet the 11-mph criterion. Wind speeds at the Eighth and Market Streets intersection would range from 6 to 16 mph, thus improving as compared to the existing conditions of 10 to 17 mph.

Overall, 26 of the 43 locations included in the wind-tunnel test would experience winds exceeding the 11-mph pedestrian-comfort criterion, three fewer than with existing conditions. The project would not cause any new exceedences of the 26-mph hazard criterion.

Project plus Potential Development

This scenario considered the project in the context of potential future development to the north and northwest of the project site. Approximate maximum building envelopes of proposed or potential development at 450 McAllister Street (City offices), 600 and 650 Van Ness Avenue (residential-retail), and the block bounded by Golden Gate Avenue and McAllister, Larkin, and Hyde Streets (Hastings College of the Law) were included in this scenario. Appendix C, pp. A.41-A.49, outlines the assumptions used for testing these proposed developments.

The wind environment of the project plus potential development would be similar to that of existing-plus-project conditions, with wind speeds increasing or decreasing by no more than one to two mph from speeds measured for the project. Compared with the existing setting, wind speeds would decrease at 22 locations, increase at 9 locations, and remain the same at 12 locations. Winds at 11 of the seating area

locations in Civic Center Plaza, United Nations Plaza, and the proposed Fulton Street Mall would continue to exceed the 7-mph seating criterion; one location at the entrance to City Hall would decrease from 8 to 7 mph, thus meeting the 7-mph seating criterion. The percentage of time the criterion was exceeded would decrease at six of the remaining 11 sites, would remain the same at three sites, and would increase at two sites. Wind speeds in the pedestrian areas would continue to range from 6 to 21 mph. The three locations near Polk, Hayes and Market Streets would continue to exceed 26 mph for more than one hour per year.

Overall, 25 of the total 43 locations included in this scenario would experience winds exceeding the 11-mph pedestrian-comfort criterion, four less than under existing conditions and one less than under the project. No new exceedences of the hazard criterion would occur with the project plus potential development.

NOTES - Wind

/1/ This section is based on a study entitled *Wind-Tunnel Test of the San Francisco Main Library Project*, August 1, 1991, prepared by Bruce R. White, Ph.D., for Environmental Science Associates, Inc. A summary of the study is included in Appendix C, pp. A.41-A.49; the complete report is on file and available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street, San Francisco, CA.

/2/ Equivalent mean wind speed incorporates the effects of gustiness or turbulence on pedestrians and is defined as the mean wind multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45.

/3/ Table C-1, p. A.49, presents all measured 10% exceeded speeds for the 43 test locations for each of the three test scenarios. The percentage of time that the 11-mph criterion is exceeded is shown for all locations where an exceedence was measured. The percentage of time that the 7-mph criterion is exceed is shown only for the 12 outdoor seating locations and potential seating locations. Measured exceedences of the 26-mph hazard criterion are presented in hours per year of exceedence. Figure C-1, p. A.48, provides a graphic representation of the test locations.

D. TRANSPORTATION

CUMULATIVE CONTEXT

Introduction

The transportation sections of the Mission Bay and South of Market Area Plan EIRs address various regional transportation impacts in 2000 (the Mission Bay EIR also analyzes transportation impacts in 2020). The Mission Bay transportation impact analyses evaluate travel generated by Mission Bay in the context of growth in travel projected for the rest of the City and Bay Area. The South of Market analyses do the same for that area. It is growth in the City and region that would result in the greatest impact on most of the transportation systems studied.

Using slightly different analysis methodologies, the two EIRs employ the same basic screenline approach to study regional transportation impacts of San Francisco employment growth. Results differ somewhat, based on the differences in forecasting techniques, but generally by less than five to ten percent; this difference is well within the range of accuracy of ten year forecasts. Therefore, the two sets of results are compatible. This summary of cumulative transportation effects will report largely from the Mission Bay EIR, with South of Market EIR results included where there is notable relevant information.

In summary, both EIRs show that by 2000, congested highway conditions would result in a shift from autos to higher use of transit and ridesharing by travelers from the Downtown & Vicinity, which includes the project site. The East Bay would be the most congested corridor, the Peninsula would be the least. By 2020, travel demand would exceed the capacity of regional transportation systems. To serve regional growth, expanded transit and freeway systems would be required.

The proposed New Main Library and proposed Asian Art Museum are expected to be completed and occupied by the year 1998; construction of the Fulton Street Mall would be completed by 2000. Therefore, the impacts of the project and its contribution to cumulative transportation impacts would occur primarily in the 1985-2000 context. The information from the Mission Bay EIR for 2020 was prepared for the purposes of analyzing full buildout impacts of Mission Bay in a proper

cumulative context, and is more speculative and subject to change. It is presented for the reader's information.

The Analysis Years

The Mission Bay EIR analysis includes studies of transportation conditions in the year 2000, and, in order to account for buildout of the Mission Bay planning area, in the year 2020. Analyses for the 1985-2000 timeframe can rely on reasonably confident estimates of regional transportation capacity improvements as defined by the regional agencies' highway and transit planners. There are no regional transportation plans or policies for 2020. Therefore, the Mission Bay EIR uses a different approach for this longer-term analysis. For the 2020 analysis, rather than reporting the impacts of future travel on transportation systems as is the analytical approach for 2000, the estimates of 2020 travel conditions use the transportation system capacities developed for 2000 as a base and identify the types of transportation improvements likely to be necessary to serve growth in travel between 2000 and 2020.

Effects of the Loma Prieta Earthquake

While many of the downtown streets and intersections have experienced changes in traffic volumes as a result of closure of damaged freeway segments, most of them are expected to be only temporary. As freeway repairs are completed, traffic is expected to return to its pre-quake patterns. Although not all repair plans have been finalized, it has been necessary to make certain assumptions about the transportation system that would be in place by the year 2000 to provide a reasonable assessment of future conditions. The following two future scenarios were the basis for the transportation analysis:

- Freeway Down Scenario A. The Embarcadero Freeway (and the Washington and Clay Street ramps) are assumed to be removed and replaced with a surface roadway. This roadway would be readily accessible from intersecting streets, similar to what will occur once all freeway demolition is completed, and all roadway obstructions removed. Given this level of access, this surface roadway scenario would provide substantially less travel capacity than that of the elevated freeway. The Mission Street / Main Street and Mission Street / Beale Street ramps, or a comparable facility, may or may not be restored at its pre-earthquake location. The section of I-280 between the U.S. 101 interchange and Army Street are assumed to be repaired or replaced with facilities of comparable

capacity. U.S. 101 ramps at Turk Street and Golden Gate Avenue are assumed to be demolished. While no definitive replacement facility, if any, has been selected, the effects of this demolition are expected to be limited to some alteration of local traffic patterns in the general vicinity of Market Street and South Van Ness Avenue and the Civic Center.

The primary effect of this scenario would be that traffic patterns on San Francisco's local street system that served the Embarcadero Freeway operate and would operate differently in the future than before the earthquake; cumulative travel impacts as they would affect the regional highway screenlines reported in the Mission Bay and South of Market EIR analyses may be the same or possibly lower to the extent access to freeway screenlines is delayed by longer travel times associated with surface street travel. Therefore, the "Regional Travel" discussion below regarding impacts on highways would still be applicable, if not an overstatement of cumulative impacts on the regional highway system serving San Francisco./1/

Freeway Down Scenario B - Limited Access. This scenario also assumes demolition of the Embarcadero Freeway and the Washington and Clay Street ramps. This scenario is reflective of the type of travel thoroughfare forwarded for further study by Mayor Agnos. This replacement roadway may or may not include subterranean segments, but would have more limited access (i.e. fewer access points to The Embarcadero) than the Freeway Down Scenario A surface roadway described in the preceding paragraphs. The result of this limited access would be that the roadway would have a higher travel capacity (because there would be fewer access points to impede through traffic) than the Freeway Down Scenario A; capacity of this limited access scenario, however, may still be somewhat lower than that formerly provided by the elevated Embarcadero Freeway. The Mission Street / Main Street and Mission Street / Beale Street ramps may or may not be restored at its pre-earthquake location. The section of I-280 between the U.S. 101 interchange and Army Street were assumed to be repaired or replaced with facilities of comparable capacity. U.S. 101 ramps at Turk Street and Golden Gate Avenue are assumed to be demolished. While no definitive replacement facility, if any, has been selected, the effects of this demolition are expected to be limited to some alteration of local traffic patterns in the general vicinity of Market Street and South Van Ness Avenue and the Civic Center.

Because it is assumed the travel capacity of this replacement scenario would approach that formerly provided by the Embarcadero Freeway, future travel conditions at the highway and transit screenlines reported in the Mission Bay and South of Market EIR analyses would continue to be applicable for describing cumulative impacts.

Regional Travel

Regional travel was analyzed for each of the three major approaches to San Francisco: the North Bay via the Golden Gate Bridge; the East Bay via the San Francisco-Oakland Bay Bridge; and the Peninsula via the U.S. 101 and I-280 freeways.

The regional travel forecasts assume that where severe congestion is projected for the highway system and where parallel transit and ridesharing systems are available, travelers would choose to shift from their autos to fill the capacity available in transit and ridesharing systems. Those shifts are assumed to be made by travelers from the Downtown & Vicinity only, because they would have more transit and ridesharing options than travelers from other parts of the City or region. The shift to transit and ridesharing would be greatest for travel to the East Bay, somewhat less to the North Bay, and none would be expected for travelers to the Peninsula by 2000. (Mission Bay EIR, Vol. II, pp. VI.E.76-79; South of Market Plan EIR, pp. 109 - 112, C-38-40).

Growth in the entire Downtown & Vicinity, including the South of Market and Mission Bay, and the rest of the region would be the primary source of travelers trying to cross the Golden Gate and Bay Bridges, and to use the U.S. 101 and I-280 freeways at peak hours. (Mission Bay EIR, Vol. II, pp. VI.E.71-83; South of Market EIR, pp. C-46-47.)

North Bay Corridor

The Mission Bay and South of Market EIRs found that the Golden Gate Bridge and its approaches operated with moderate congestion (driving speeds of about 35 to 45 mph) in peak hours in 1985. By 2000, heavy congestion on the bridge (a driving speed of about 30 mph) would last about two hours during the p.m. commute period if additional transit capacity between downtown and the North Bay were provided, and a substantial shift from autos to transit and ridesharing were made by travelers from the Downtown & Vicinity. If no shift from 1985 transit use levels were to occur, the period of heavy congestion on the Bridge would last for about four hours in 2000.

Golden Gate Transit indicates that it would be able to increase its bus and ferry capacity between Downtown and the North Bay by 2000 in response to the demand generated. Golden Gate Bus ridership would almost double, with projected Levels of Service (LOS) of D during the p.m. peak hour and LOS C during the p.m. peak period. Golden Gate ferry ridership would grow by about 60 percent from 1985 to 2000 and operate at LOS B during the p.m. peak hour and period. Ridesharing is projected to increase by 7 percent to 15 percent between 1985 and 2000 in the North Bay.

By the year 2020, heavy congestion on the Golden Gate Bridge could last about four hours, assuming the levels of transit and ridesharing used in 2000, if there were no additional transportation improvements between 2000 and 2020. The Mission Bay EIR indicates that, by that time, the need to consider major new transportation infrastructure and transit systems will have become apparent. The Mission Bay EIR provides examples to illustrate the magnitude of improvements that could be necessary; those mitigation measures therefore are not prescriptive, but indicative of the level of investment required to respond to future travel demand, which would require in-depth review and analysis in the next phase of regional transportation planning. Those mitigation measures include adding a second deck to the Golden Gate Bridge to provide transbay capacity for new bus and carpool lanes, or a light-rail line, either of which would extend between downtown San Francisco and Sonoma County. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 39, 41, 71-92, 94-125, 129-134, 214-215, and 225-226; South of Market Plan EIR pp. 98-105, and 111-124.)

East Bay Corridor

There currently is virtually no room for additional vehicle traffic on the eastbound Bay Bridge approaches between 4:00 p.m. and 6:00 p.m. While the growth in travel demand on the Bay Bridge from the Downtown & Vicinity could be served by shifting those commuters from autos to transit and increased ridesharing, trips to or from other areas of the region generally are not well served by transit and would continue to be made primarily in private vehicles.

Even with the substantial shift to transit and ridesharing assumed in the analysis for travelers from the Downtown & Vicinity, the Bay Bridge would operate at capacity for about 4.5 hours in 2000, resulting in severe congestion on the San Francisco approaches to the bridge, travel speeds of less than 30 miles per hour, and heavy congestion on the bridge itself every weekday afternoon. Were the shift to transit and ridesharing from 1985 levels not to occur, the period of severe congestion in 2000 would extend for more than 5.5 hours.

By 2000, the numbers and proportion of commuters from the Downtown & Vicinity on BART during the p.m. peak period would be substantially higher. The number of trips

on AC Transit would increase by about 65 percent based on the service available and the need to accommodate some riders that would otherwise use BART if ridership conditions were less crowded by 2000.

The ratio of passengers to seats on BART would increase from 1.30 in 1985 to 1.63 in 2000 (LOS F). AC Transit ridership would increase from 0.85 passengers per seat in 1985 to 1.30 in 2000 (LOS E). The capacity of BART is based on the maximum capacity of BART's computer system to track trains. The crowding projected for BART could not be fully mitigated during the peak period because of the system's technical operating limits.

An increase of seven percent in ridesharing from the Downtown & Vicinity across the Bay Bridge is projected for 2000. Even with substantial shifts to transit and ridesharing by commuters from the Downtown & Vicinity, by 2020 severe congestion on the Bay Bridge and its approaches would last for more than five hours. The number of regional vehicle trips which could not be served by the Bay Bridge during the p.m. peak period (4:00 - 6:00 p.m.) would grow from about 3,100 vehicles in 2000 to about 5,800 in 2020.

Mitigating those levels of congestion would require consideration of major changes to the regional transbay transportation system connecting the West Bay and East Bay. Virtually all of the concepts would require the City to work with MTC, Caltrans, and local government agencies to undertake the regional planning needed to expand transbay transportation capacity. (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 37-41, 71-92, 94-124, 126-127, 129-133, 215-216, and 226-230; South of Market EIR pp. 98-105, and 111-124.)

Peninsula Corridor

Between 1985 and 2000, traffic would increase on U.S. 101 and Interstate 280, the freeways serving the Peninsula. However, there would be less congestion on those routes at the San Mateo County Line than on the Golden Gate and Bay Bridges. Both U.S. 101 and I-280 were only moderately congested at the San Mateo County line in 1985. In or near San Francisco, the capacity of local streets, U.S. 101, and I-280

would be sufficient to handle future travel demand; the switch from highway to transit modes by Downtown & Vicinity commuters assumed for the Golden Gate and Bay Bridges would not be required for the routes serving the Peninsula. The transit analysis for 2000 and 2020 in this regional corridor therefore uses the same amount of transit capacity as in 1985.

U.S. 101 at the San Mateo County line would operate at capacity for about three hours in 2000, with heavy congestion and speeds of 30 miles per hour occurring during that afternoon peak period. By 2020, heavy congestion on U.S. 101 would last for over three afternoon hours. I-280 would operate with only moderate congestion at the county line in 2000 and 2020 with speeds averaging 35 to 45 miles per hour throughout the peak period. The congestion projected in 2020 would be reduced if commuters from the Downtown & Vicinity chose to increase their use of transit or ridesharing above the 1985 levels.

Transit ridership to the Peninsula would grow, although not to the extent that transit capacity would have to be increased above the 1985 levels. In 2000, the level of service on transit would remain high during the p.m. peak period (LOS B or C for all carriers), as there would be no system where ridership would be greater than available seats. Use of BART and SamTrans would grow by about 40% while CalTrain ridership would grow by just 5% (assuming the CalTrain station remains at Fourth and Townsend Streets). In 2020, CalTrain, BART and SamTrans would carry even larger loads, but would continue to operate below capacity (LOS B or C). (Mission Bay EIR, Vol. II, pp. VI.E.31-34, 37-38, 42-43, 61-62, 71-92, 94-124, 127-133, 216-217, and 230-231; South of Market EIR pp. 98-105, and 111-124.)

Regional Highway Constraint Points

As a result of growth in regional travel demand, the following freeway segments lying beyond the screenlines in the transportation analysis could constrain San Francisco travel: the I-80/580/I-880 interchange in Oakland; the Caldecott Tunnel on State Route 24; I-80 in Alameda and Contra Costa Counties; U.S. 101 in Marin County; and U.S. 101 south of I-380 in San Mateo. (Mission Bay EIR, Vol. II, pp. VI.E.133-140.)

Local Transit and Streets

MUNI

To analyze cumulative impacts on MUNI, individual MUNI routes were grouped on the basis of the location of their alignments and stops into the "Northeast," "Northwest," "Southwest," and "Southeast" areas of San Francisco, referred to as "screenlines." By 2000, ridership would generally be accommodated on the MUNI screenlines. Slight overcrowding (LOS E) would occur on the Northwest screenline during the p.m. peak hour, and on the Northeast screenline during the p.m. peak period. However, by 2020, all but the Southwest screenline would be operating beyond MUNI's load standard (an overall average of 1.25 passengers per seat). Additional service required could include new light rail service to the Geary Boulevard corridor to the northwest, and to the Bayshore corridor in the southeast area of the City. (Mission Bay EIR, Vol. II, pp. VI.E.34-35, 93-99, 103-104, 114-124, 129-133, 217, and 231; South of Market Plan EIR, pp. 98-102, 112-117, C-19-21, and C-37.)

Local Streets

The Mission Bay and South of Market EIRs assumed the transportation network that existed before the Loma Prieta earthquake to be in place in the future. The following discussion is based on that assumption, modified to account for the fact that the Embarcadero Freeway is being demolished.

Severe congestion would continue to occur in both 2000 and 2020 on several of the James Lick (I-80) freeway approaches in the South of Market Area. Those streets and freeway ramps serve traffic destined for the Bay Bridge and Peninsula. Several of those streets are heavily congested now. The number of severely congested I-80 approach intersections would increase by 2000 and increase again by 2020, and this congestion would be worse than was projected by the Mission Bay and South of Market EIRs because the roadway that eventually replaces the Embarcadero Freeway would likely have less travel capacity than did the elevated freeway.

The First / Harrison Street, Fifth / Bryant Street, and Sixth / Brannan Street intersections presently operate at LOS F and would continue to do so in the future. Other intersections at or near freeway ramps, such as Fourth and Harrison would deteriorate from LOS C in 1991 to LOS E or F in the future. In particular, the queue for the Fourth / Harrison on-ramp has increased noticeably in the p.m. peak hour since the earthquake. Intersections near freeway ramps are often affected by freeway access queues, as cars waiting to enter the freeway back up to or through these intersections. This affects local traffic attempting to use streets in these areas. Some traffic will shift and use less congested routes in the future as this problem increases. Continued enforcement of the ordinance passed in 1987 prohibiting blocking an intersection should help to limit this problem. By 2000, certain improvements to the local street network are planned to be in place, which would facilitate traffic circulation and access to I-280 by travelers from the Downtown & Vicinity. As a result of the I-280 Transfer Concept Program and Mission Bay Plan, King Street would be improved to function as a major roadway, with new on- and off-ramps to I-280. With cumulative development, the new major intersections at Third / King Streets, and Fourth / King Streets are projected to operate at LOS D in year 2000, and LOS E and F in 2020, respectively. Mitigation measures to provide for more left-turn lanes and towaway lanes during commute periods would reduce congestion. (Mission Bay EIR, Vol. II, pp. VI.E., 140-148, 166-175, 200-201, and 218-219; South of Market EIR, pp. 105-106, and 124-126.) It is expected that operating conditions on other local South of Market streets and intersections not serving freeway ramps (or near freeway-serving intersections) would continue to operate in a generally free flowing manner in the future, at least to 2000.

For the local street system to operate at the level described above, there would have to be a high level of public transit use in the Downtown & Vicinity. In 1985, about 55 percent of all afternoon peak-hour outbound trips from the Downtown & Vicinity were on public transit. That level of transit could grow to about 70 percent of all trips, based on the increased capacity of transit systems expected to be available by 2000, and the congestion levels estimated to occur in the future.

As described on p. 73 - 74, the Embarcadero Freeway has been demolished. Given this fact, the local street system serving The Embarcadero roadway will operate differently than the manner in which it served the Embarcadero Freeway. Generally, queues

and delays at intersections will be lengthened along the street corridors leading to remaining Bay Bridge ramps during the afternoon commute. Also, an increase in average delays on the Bay Bridge would be expected during the morning commute period. Any proposal for the construction of a new roadway along The Embarcadero will be subject to separate environmental review.

Proposed development in the project vicinity includes: 111 Jones Street at Turk Street (Case No. 90.741E), 100 affordable dwelling units, and 201-225 Turk Street near Jones Street (Case No. 90.811E), 175 affordable dwelling units plus commercial uses, both of which have been approved; 650 Van Ness Avenue, which was encompassed in the Van Ness Avenue Plan EIR (Case No. 88.750E, Final EIR certified December 17, 1987), 13 stories, 222 dwelling units with ground-floor retail and 600 Van Ness Avenue at Golden Gate Avenue (Case No. 89.627E), 13-story-plus-basement mixed-use development with residential (110 units), office and commercial uses. The Police Department has recently moved some administrative and patrol uses into the former Hibernia Bank building at 1 Jones Street at McAllister Street, and plans to acquire the building for permanent use are currently under review (Case No. 91.538E). The City plans to construct a new City office building at 400-450 McAllister Street, on the site of the existing City Hall Annex and the adjacent parking lot, with initial plans calling for a net addition of about 145,500 sq. ft. of office space. Hastings College of the Law plans to develop portions of its "West Block" (the block bounded by Hyde, McAllister and Larkin Streets and Golden Gate Avenue) and the former KGO television building on the block immediately to the east. The potential range of development includes a legal services office building, a courts building, and housing (market rate, student, and/or affordable)/2/ (Case No. 90.333NLA). Finally, the two closed state office buildings, at 350 McAllister Street and 525 Golden Gate Avenue, are assumed to be reopened by the project completion date (2000).

The residential developments listed above are currently undergoing environmental review. The 650 Van Ness Avenue proposal was accounted for in the analysis conducted for the program EIR on the Van Ness Avenue Plan. The proposed Hastings development is not defined at this time, and will be analyzed in a State-prepared EIR. (Assumptions were made, for estimation of cumulative parking demand, that the Hastings project would include a mix of educational, office, retail, residential, and parking; see the cumulative parking discussion, pp. 149 to 151). The EIR for the New

Main Library considers localized cumulative impacts, including, but not limited to, the proposed City office building at 450 McAllister Street.

The Mission Bay and South of Market Plan EIRs include forecasts of space by use for the greater downtown area in San Francisco (the Downtown & Vicinity) for the Year 2000. These forecasts account for a decline rather than anticipated growth in employment in the C-3 District and elsewhere in the Downtown & Vicinity during the early 1980's, provide forecasts of space associated with employment growth in the future, and take into account specific buildings approved or under construction that would accommodate a portion of the employment increase forecast. The forecasts go beyond the timeframe during which the known and proposed space would be built and absorbed. The project as part of the Downtown & Vicinity is accounted for in this cumulative land use analysis./3/

PROJECT IMPACTS

Travel Demand

The transportation impact analysis includes three project components: the New Main Library, the new Asian Art Museum, and the Fulton Street Mall. The potential impacts associated with the New Main Library were determined on the basis of activity and behavior of patrons at the existing Main Library and the library administration's projection of future patronage.

Library project impacts were calculated using only the net new trip ends (that is, the difference between the existing library and the new library trip ends) that would be generated by the new library, based on projections made by library staff. (A trip end [or simply "trip"] is a one-way trip; a patron who arrives at and later leaves the library [one round trip] generates two person trip ends (pte).) Trip ends generated by the existing library (including library offices in the 45 Hyde Street building) have been accounted for in traffic and pedestrian counts conducted in late 1990, and are included as part of the existing conditions. Those trips were not analyzed as part of impacts. It was also assumed that other (non-library) City workers at 45 Hyde Street (approximately 60) would be relocated within the Civic Center. Trips generated by those employees would continue to occur in the Civic Center. Therefore, those trips were not analyzed as part of impacts.

Patronage projections for the proposed Asian Art Museum were based on projections of attendance made by museum staff. Travel behavior and mode split data were based on activity at the Museum of Modern Art (MOMA), located about two blocks from the proposed site of the new Asian Art Museum. Because the new Asian Art Museum would also be in the Civic Center, it is appropriate that related analysis reflect transportation activity characteristic of an art museum, such as MOMA, within the Civic Center, rather than assuming these characteristics based on the Asian Art Museum's current location in Golden Gate Park. The new location would be more accessible by transit than the current museum in the park. It would also be more accessible to City workers and others in the Civic Center and Downtown. Finally, the museum's proposed operating hours (approximately 12 noon to 7:30 p.m.) would encourage after-work patronage that could further increase attendance.

Patron surveys were conducted at the existing Main Library and at MOMA in order to assess potential project impacts./4/ Patrons at both locations were asked questions regarding mode of transportation to the library or museum; origin prior to and destination after their visit; and length of visit.

New Main Library

The New Main Library would generate about 5,575 net new person trip-ends (pte) per day, nearly 100 percent of which would be patron trips, as employment is projected to remain close to the present level. As previously noted, travel generated by existing library patrons and employees is excluded from this figure; the total number of trips generated by the New Main Library would be about 12,300 pte, while the existing library generates about 6,725 pte./5/ The New Main Library would generate about 1,030 net new pte in the p.m. peak-hour (5:00-6:00 p.m.); about 64 percent, or 660, of these trips would be in the outbound direction./6,7/

Library gate counts conducted in November 1990 and February 1991 showed no fixed peak hour, but instead showed a day-to-day shift in weekday peak hour of patronage between the hours of 1:30 p.m. and 5:30 p.m. Therefore, it can be assumed that hour-to-hour peaks are relatively constant throughout this time period.

Asian Art Museum

The Asian Art Museum would generate a maximum of about 7,500 patron pte per day, all of which would be considered net new trips. This would occur during major exhibitions, when a maximum of 500 patrons per hour would be admitted during the museum's projected 7.5-hour day. Such major exhibits would be held during approximately four months every other year; therefore, the trip generation associated with such exhibits is used for the purposes of a conservative analysis; actual trip generation during other times could be much lower. Museum employees (including docents and other volunteers) would generate another 750 pte daily, making the daily total about 8,250 pte; again, all would be new trips. Approximately 675 pte would be generated in the p.m. peak hour./7,8,9/

No attempt was made to estimate the number of linked trips; that is trips that would involve a combined visit to the New Main Library and the Asian Art Museum or a visit to one or both by workers or others already at Civic Center. Such trips would be expected to occur; however, they were not included in the analysis, which is therefore conservative.

Fulton Street Mall

No additional trips would be generated by the Fulton Street Mall. All use of this open space was assumed to be by pedestrians or visitors to other uses in the Civic Center area.

Total net new project trip generation for all three components of the project would be approximately 13,825 pte daily and about 1,705 pte in the p.m. peak hour (5:00-6:00 p.m.) Table 2 summarizes trip generation data for the project.

Assignments to travel modes for patrons of the New Main Library and the Asian Art Museum were made on the basis of the patron surveys; employee assignments were based on City guidelines./4,10/ Table 3, p. 133, shows the percentage of each mode and corresponding number of pte. Because of the project's proposed location in the central urban area of San Francisco, pedestrian and transit usage is projected to be characteristically high. Those trips would account for 78 percent of p.m. peak-hour net

TABLE 2: PROJECT TRIP GENERATION

	Daily	P.M. Peak	P.M. Peak In	P.M. Peak Out
Library (Net New)				
Patrons	5,555	1,027	370	657
Employees	20	2	0	2
Asian Art Museum (New)				
Patrons	7,500	600	216	384
Employees	750	77	28	49
TOTAL	13,825	1,706	614	1,092

SOURCE: Wilbur Smith Associates

new Main Library trips and 71 percent of Asian Art Museum trips. During the p.m. peak hour, the New Main Library would generate about 180 vehicle trips and the proposed Asian Art Museum, about 145 net new vehicle trips, a total of about 325 net new p.m. peak-hour vehicle trips./11/

Geographic distribution of patron p.m. peak-hour vehicle trips was based on the patron surveys; employee trips were distributed based on City guidelines./4,10/ The availability and location of off-street parking was also a factor in the distribution of patron and employee vehicle trips. Potential parking locations, including on-street and nearby off-street sites such as the Civic Center Garage, were identified based on the weekday occupancy surveys collected for this analysis.

Traffic

Local Intersection Traffic

Nine intersections in the project vicinity were studied to determine the effects of project-generated traffic. The eight signalized intersections analyzed include Van Ness Avenue / McAllister Street; Polk Street / McAllister Street; Larkin Street /

TABLE 3: P.M. PEAK HOUR MODE SPLIT AND NET NEW VEHICLE TRIP GENERATION/a/

Mode	Library (Net New) Patrons %	Patrons pte/b/	Employees %	Employees pte/b/	Vehicle Trips	Asian Art Museum (New) Patrons %	Patrons pte/b/	Employees %	Employees pte/b/	Vehicle Trips	Total (pte)/b/	Project Vehicle Trips
Drive/c/	20	205	15.8	0	158	29	174	15.8	12	136	391	294
Drop-off	2	21	10.5	0	21	0	0	10.5	8	8	29	29
Walk	28	288	2.9	0		44	264	2.9	2		554	
MUNI	38	390	35.9	2		19	114	35.9	29		535	
BART	4	41	21.3	0		3	18	21.3	16		75	
Others/d/	8	82	13.6	0	—	5	30	13.6	10	—	122	—
TOTAL	100	1,027	100.0	2	179	100	600	100.0	77	144	1,706	323

/a/ The p.m. peak hour occurs from 5:00 p.m. to 6:00 p.m.
/b/ pte = person trip ends
/c/ Based on survey data indicating 1.3 persons per vehicle for library patrons and 1.4 persons per vehicle for Asian Art Museum patrons. See footnotes 4 and 11, pp. 157-158.
/d/ Includes trips on regional transit carriers such as Golden Gate Transit and Sam Trans, and trips made by taxi, bicycle, and motorcycle.

SOURCE: Wilbur Smith Associates

McAllister Street; Hyde Street / McAllister Street; Hyde Street / Fulton Street; Larkin Street/Grove Street; 8th Street / Market Street; and 9th Street / Market Street. The Larkin Street / Fulton Street unsignalized intersection was also analyzed. The intersections analyzed are shown in Figure D-2, p. A.57, of Appendix D.

Table 4 summarizes the volume/capacity (V/C) ratios and levels of service (LOS) at each study intersection for existing, existing-plus-project, and cumulative (including project) conditions. Differentiation is made between signalized and unsignalized intersections for purposes of analysis. While overall LOS can be calculated for signalized intersections, an overall LOS cannot be calculated for unsignalized intersections. Instead, LOS is calculated for major and minor approaches to an unsignalized intersection, and analysis is based on the reserved capacity; that is, the measure of the ability of the minor street traffic flow to enter or cross the major street during gaps in major street traffic flow.

The existing traffic volumes are based on counts conducted on Wednesday, November 7, 1990. Wednesday was selected as the representative weekday to conduct the counts for a conservative analysis because the Farmers' Market takes place on Wednesday at the United Nations Plaza, east of the project site. The background traffic combined with the Farmers' Market is indicative of typical weekday (non-special-event) peak conditions.

With the proposed closure of Fulton Street, first for a construction staging area and then as a pedestrian mall, two intersections, Larkin Street / Fulton Street and Hyde Street / Fulton Street, would no longer function as intersections. Therefore, LOS for these two intersections are not provided for the existing-plus-project and cumulative scenarios; traffic from the block of Fulton Street between Larkin and Hyde was redistributed to surrounding streets in determining future level of service.

Seven of the eight signalized intersections currently operate at LOS C (good) or better during the p.m. peak hour, which was observed to occur from 5:00 to 6:00 p.m. (LOS D, generally described as fair traffic operations and including substantial delays during short periods in the peak period, is considered satisfactory during peak hours.)

TABLE 4: PROJECTED PEAK-HOUR INTERSECTION VOLUME-TO-CAPACITY RATIOS (V/C) AND LEVELS OF SERVICE (LOS)/a,b/

Intersection	Existing(1990) V/C	Existing(1990) LOS	Existing + Project V/C	Existing + Project LOS	Cumulative + Project (2000) V/C	Cumulative + Project (2000) LOS
Signalized:						
Van Ness/McAllister	0.76	C	0.80	C/D	0.87	D
Polk/McAllister	0.62	B	0.66	B	0.72	C
Larkin/McAllister	0.68	B	0.76	C	0.83	D
Hyde/McAllister	0.59	A	0.60	A/B	0.66	B
Hyde/Fulton	0.44	A	/c/	/c/	/c/	/c/
Larkin/Grove	0.52	A	0.69	B	0.73	C
Eighth/Market	0.76	C	0.77	C	0.83	D
Ninth/Market /d/	0.92	E	0.93	E	1.01	F
Unsignalized:						
Larkin/Fulton/e/	70/563/156	E/A/D	/c/	/c/	/c/	/c/

/a/ LOS descriptions and relationship to V/C ratios are shown in Tables D-2 and D-3, pp. A.55-A.56 of Appendix D.

/b/ Based on traffic counts conducted by Wilbur Smith Associates on Wednesday, November 7, 1990.

/c/ With the proposed closure of Fulton Street between Larkin and Hyde Streets, these intersections would no longer exist.

/d/ Ninth Street has a bus stop on the near side of Market Street that serves as right-turn / through lane when not occupied by buses. This was not included in LOS calculation, which is therefore conservative. Ninth and Market intersection splits into two legs (Larkin and Hayes Streets) on north side of Market Street; Market has a separate right-turn lane onto Hayes Street. This geometry is considered in the LOS determination.

/e/ Unsignalized intersection: reserve capacities and levels of service refer to Fulton Street westbound left turn; Fulton Street westbound right turn; and Larkin Street southbound left turn.

SOURCE: Wilbur Smith Associates

The Ninth at Market Streets intersection currently operates at LOS E (poor; capacity is defined as LOS E). The Fulton Street left turn movement at the Larkin Street / Fulton Street (unsignalized) intersection also operates at LOS E; the westbound right turn movement LOS is A; and the Larkin Street southbound left-turn movement operates at LOS D.

The existing LOS E condition at the Ninth Street / Market Street intersection is due primarily to bus movements on Market Street. Bus stops, located on Market Street in both directions, impede traffic in all four lanes of traffic (the center lanes are served by pedestrian island bus stops). Throughout the p.m. peak hour, buses stopping at or near the intersection impede the general flow of traffic. Because of relatively heavy bus traffic on Market Street, passenger car equivalency factors were applied to bus traffic; these factors weight buses more heavily than automobiles to account for their disproportionate effects on traffic flow. This is consistent with City of San Francisco guidelines./12/ Bus factors were not applied to other streets with bus stops within the study area (for example, MUNI Route 5-Fulton bus stops on McAllister Street at Larkin Street) because bus movements at these intersections do not noticeably impede traffic flow throughout the p.m. peak hour. There is a bus stop on Ninth Street at the southeast corner of Market Street that is used by both through and right-turning traffic when it is available. Because the use of this lane was not taken into account in the LOS calculation for the Ninth and Market Streets intersection, the analysis is conservative.

The New Main Library would generate about 180 net new p.m. peak-hour vehicle trips and the proposed Asian Art Museum would generate about 145 new p.m. peak-hour vehicle trips, a total of about 325 p.m. peak-hour vehicle trips. The distribution of these trips reflects current travel patterns, available parking locations, and the origins and destinations of visitors to each location.

The addition of project-generated traffic to existing volumes would worsen intersection levels of service at Larkin and Grove Streets (LOS A to LOS B); at Larkin and McAllister Streets (LOS B to LOS C); at Van Ness Avenue and McAllister Street (LOS C to LOS C/D); and at Hyde and McAllister Streets (LOS A to LOS A/B). None of these intersections would approach capacity; other intersections analyzed would experience increased volume-to-capacity ratios as a result of project traffic, but not enough to change the LOS at any location, including Ninth and Market Streets, which would remain at LOS E.

Cumulative growth to the Year 2000 was based on 15 percent growth factor between 1985 and 2000./13/ This rate assumes reopening of the nearby state office buildings and opening of other buildings that are currently planned, including the proposed City office building at 450 McAllister Street and Hastings College of the Law development, as well as several residential and mixed-use projects proposed for the project vicinity (see p. 128). The Museum of Modern Art is planning to relocate from the Civic Center. Its space in the Veterans' Building could be devoted to another use, and the conservative analysis used here would account for such a use. This analysis assumed one-third of this growth has already occurred since 1985 and was accounted for in the recently collected traffic counts. The remaining two-thirds of this growth was calculated by increasing existing turning movement volumes by ten percent and adding project generated trips to these volumes. These calculations were also used to forecast cumulative volumes for pedestrians.

With cumulative volumes, all study intersections would experience deteriorated levels of service, but all except Ninth and Market Streets would operate at LOS D or better. The Ninth and Market Streets intersection would decrease in LOS from E to F, with a V/C ratio of 1.01. Cumulative LOS are shown in Table 4, p. 135.

Freeway Corridor Analysis

The project would contribute to increases in traffic on the major freeways serving the Downtown & Vicinity. Traffic generated by the project itself would increase total traffic on major freeways during the p.m. peak hour by about 0.3 percent or less. Such increases would not be measurable against the day-to-day fluctuations in traffic volumes. Because the Bay Bridge p.m. peak-hour eastbound traffic flow is functionally at capacity, the travel demand from the project would not be expected to increase the flows on the Bay Bridge in the peak hour; rather, the East Bay-bound auto traffic from the project would most likely compete with and delay existing users of the Bay Bridge into later portions of the peak period. This competition for access would occur at the on-ramps to the Bay Bridge and any displacement of existing users to later time periods would depend upon the time of arrival of project vehicles at the on-ramps. Some drivers would shift to carpools or transit as a result of cumulative displacement. Because library and museum patrons (who would generate the bulk of project trips) would not be as likely to be on fixed schedules as would be project employees (and other area workers), some patrons might choose to make their trips at times other than the peak period.

Transit

Local Transit

More than 15 MUNI lines, including the underground Metro lines, stop within one block of the project site; about 20 MUNI lines are within one-quarter mile walking distance. BART, SamTrans, and Golden Gate Transit also stop within one block of the site. Figure 35 shows transit routes in the project area.

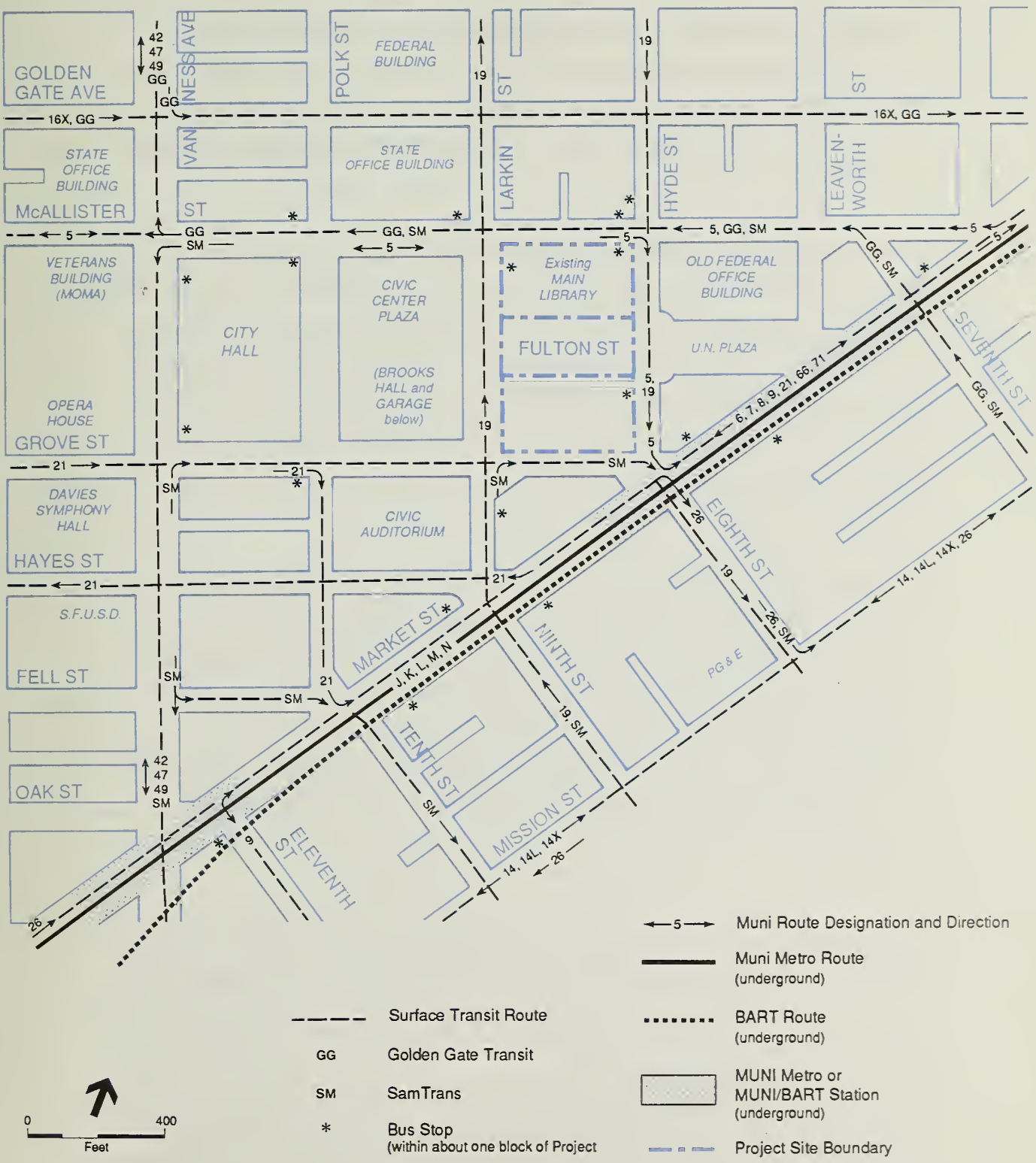
Potential transit users were distributed to area transit lines based on responses from the existing Main Library and MOMA patron surveys and employee mode split data. It was assumed that specific line usage by Asian Art Museum patrons would be similar to Main Library users due to their proximity. Approximately 390 net new p.m. peak-hour MUNI trips would be generated by the New Main Library. The Asian Art Museum would generate about 145 new p.m. peak-hour MUNI trips, for a project total of about 535 new p.m. peak-hour MUNI trips (see Table 3, p. 133). About 64 percent of these trips, or about 345 trips, would be in the outbound (peak) direction.

Maximum load factor standards have been defined by MUNI which represent the greatest number of passengers comfortably carried by a MUNI vehicle./14/ With the addition of the project p.m. peak hour MUNI riders to existing ridership, MUNI load factors would remain within the MUNI-defined acceptable ranges except within the northwest quadrant, where some overcrowding would occur in the p.m. peak hour.

Table D-1, Appendix D, p. A.50, provides descriptions of levels of service for bus transit. Figure D-1, pp. A.51-A.53, shows photographic examples of p.m. peak-hour loading conditions on MUNI vehicles.

Existing MUNI bus shelters at Larkin and McAllister Streets and on Hyde Street south of Fulton Street could be affected by the project. The Larkin Street shelter, which serves the 19-Polk bus line would be retained./15/ The Hyde Street shelter would be relocated during construction and would be replaced in a similar location once the New Main Library were completed./16/

About seventy-five new p.m. peak-hour BART trips would be generated by the project. Based on a count conducted by BART on Thursday, August 1, 1991, during BART's p.m. peak hour of operation, which is from 5:00 to 6:00 p.m., there are



SF Main Library ■

SOURCE: San Francisco Street & Transit Map, 1990;
SamTrans Bus Route Map, 1990; Wilbur Smith Associates

Figure 35
Transit Routes in the Project Area

currently about 3,000 entrances and 700 exits made by BART patrons at Civic Center station./17/ The project-generated BART trips would include about 50 new trips to BART trains in the p.m. peak hour, or about 1.6 percent of the current number of entrances at Civic Center station; this would not have noticeable impacts on BART operations.

In the p.m. peak hour in 2000, project-generated MUNI trips would account for about one percent of MUNI trips among the four MUNI screenlines analyzed in the Mission Bay EIR. Project-generated BART traffic would account for about 0.1 percent of BART ridership. The project would contribute to cumulative increases in transit ridership in the major regional transit corridors leading to and from downtown San Francisco that would result in a decrease in LOS for several of the transit carriers.

Pedestrian Movements

Pedestrian levels of service were calculated using the Pushkarev and Zupan's *Urban Space for Pedestrians*./18/ For pedestrian crosswalks, pedestrian flow rates, or the number of pedestrians passing a point per unit of time, are the basis for the flow regimen designation. The flow rate is calculated using the width of the crosswalk and the number of pedestrians using the crosswalk per peak 15-minute period. Qualitatively, the flow regimen indicates the "the freedom to choose desired speeds and to bypass others." (See Appendix D, pp. A.50-A.61, for an explanation of pedestrian flow rates and levels of service. Figure D-3, pp. A.59-A.60, shows photographs of sidewalk conditions for each flow regimen.)

Pedestrian entrances to the New Main Library would be on Larkin Street between Fulton and Grove Streets; on Fulton Street between Larkin and Hyde Streets; and on Grove Street west of Hyde Street; the Grove Street entrance would be expected to be the most heavily used entrance. An employee entrance would be located on Hyde Street near Fulton Street. Pedestrian entrances to the Asian Art Museum would be on Larkin Street between Fulton and McAllister Streets and on Fulton Street between Larkin and Hyde Streets. An auxiliary entrance would be located on Hyde Street near Fulton Street. Two new exit-only stairways from Brooks Hall would be constructed parallel to Larkin Street emerging just west of the building, one near the Larkin / Fulton Streets intersection and the other near the Larkin / Grove Streets intersection.

Table 5 summarizes pedestrian flow conditions in crosswalks near the site. Existing pedestrian volume counts were conducted during the midday and p.m. peak hours at Larkin Street / Fulton Street, Hyde Street / Fulton Street, Hyde Street / Grove Street, and Larkin / Grove Street. Pedestrian flow regimen were calculated for both the midday peak hour and the p.m. peak hour. The midday peak hour was found to occur between 12:00 p.m. and 1:00 p.m. Highest pedestrian volumes occur in the midday peak. All of the crosswalks analyzed currently operate as open or unimpeded, indicating that pedestrians are able to walk with minimal conflicts with other pedestrians at these locations, except the south crossing at Hyde Street / Fulton Street, which is impeded during the midday peak hour. An impeded flow regimen indicates that pedestrians must exercise a relatively high degree of indirect interaction in order to avoid conflicts. While vehicular activity within the Civic Center is relatively heavy, the area's plazas and wide sidewalks encourage pedestrian activity between its government buildings, art centers and the existing library. Sidewalk obstructions, such as newspaper vending racks, can interfere with pedestrian flows. Such racks are in place on the Larkin Street side of the existing Main Library. It is possible that newsracks would be placed at or near one or more entrances to the New Main Library. Newsracks placed on the Grove Street sidewalk, which would be 10 feet wide and partially obstructed by street trees, could interfere with pedestrian circulation. The street trees themselves, which would be planted in grated cutouts in the sidewalk, would not reduce sidewalk capacity below acceptable levels. (The effective sidewalk width would be about seven feet.) A curbside book drop is planned for the Larkin Street side of the New Main Library; it would not be expected to interfere with pedestrian traffic.

The existing midday peak-hour counts reflect the number of workers who visit the Civic Center Plaza area on their lunch breaks. The patron surveys at the existing Main Library indicate that many noon-time visitors work in the nearby government buildings, although many other patrons come from the downtown area.

Patron surveys at MOMA also indicated noon-time visitors come from Civic Center office buildings. Many of these people came not to visit the galleries, but to patronize the gift shop. The proposed New Main Library and the Asian Art Museum each would contain a gift shop.

Currently, most BART and MUNI pedestrian trips are oriented towards United Nations Plaza. The New Main Library's Grove Street entrance would provide the closest access to the BART and MUNI Metro station entrance at Eighth and Market

TABLE 5: PEAK PEDESTRIAN VOLUMES AND FLOW REGIMEN (crosswalks)

	Width (feet)	Existing p/f/m /a/	Existing Flow Regimen/b/	Existing Plus Project p/f/m /a/	Existing Plus Project Flow Regimen/b/	2000 p/f/m /a/	2000 Flow Regimen/b/	2000 Project Percent/d/
MIDDAY PEAK /c/								
Larkin/Fulton Streets								
East	18.0	0.6	Unimpeded	1.9	Unimpeded	2.0	Unimpeded	67%
North	20.0	0.5	Unimpeded	1.5	Unimpeded	1.5	Unimpeded	62%
South	17.5	0.5	Unimpeded	1.0	Unimpeded	1.1	Unimpeded	49%
Hyde/Fulton Streets								
North	15.9	1.4	Unimpeded	3.0	Impeded	3.2	Impeded	51%
West	13.25	0.5	Unimpeded	1.1	Unimpeded	1.1	Unimpeded	54%
South	8.4	3.2	Impeded	4.3	Impeded	4.6	Impeded	26%
Hyde/Grove Streets								
West	18.0	0.3	Open	1.4	Unimpeded	1.5	Unimpeded	74%
Larkin/Grove Streets								
North	8.0	1.2	Unimpeded	3.4	Impeded	3.5	Impeded	63%
P.M. PEAK/c/								
Larkin/Fulton Streets								
East	18.0	0.2	Open	1.1	Unimpeded	1.2	Unimpeded	77%
North	20.0	0.3	Open	1.0	Unimpeded	1.1	Unimpeded	66%
South	17.5	0.4	Open	1.0	Unimpeded	1.0	Unimpeded	57%
Hyde/Fulton Streets								
North	15.9	0.8	Unimpeded	1.6	Unimpeded	1.7	Unimpeded	50%
West	13.25	0.2	Open	0.5	Unimpeded	0.5	Unimpeded	58%
South	8.4	1.3	Unimpeded	4.2	Impeded	4.3	Impeded	66%
Hyde/Grove Streets								
West	18.0	0.3	Open	0.9	Unimpeded	0.9	Unimpeded	60%
Larkin/Grove Streets								
North	8.0	0.3	Open	2.0	Unimpeded	2.0	Unimpeded	86%

/a/ Pedestrians per foot of effective crnsswalk width per minute.
/b/ See Table D-4 and Figure D-2, Appendix D, pp. A.58-A.60, for descriptions of pedestrian flow regimens.
/c/ Peak 15-minute periods.
/d/ Percentage of project-generated pedestrian trips of total pedestrian volumes in 2000.

SOURCE: Wilbur Smith Associates and Pushkarev and Zupan, Urban Space for Pedestrians.

Streets. This potential pedestrian reorientation was used when distributing project pedestrian trips.

The project would generate about 710 pedestrian trip ends in the midday peak hour and about 535 pedestrian trips in the p.m. peak hour. The midday flow regimen at the north crosswalk at the intersection of Hyde and Fulton Streets would change from unimpeded to impeded, as would the north crosswalk at the intersection of Larkin and Grove Streets. The west crosswalk at the intersection of Hyde and Grove Streets would worsen from open to unimpeded. Other midday crosswalks analyzed would operate at existing conditions. During the p.m. peak hour, the flow regimen at the south crosswalk at the intersection of Hyde and Fulton Streets would change from a flow regimen of unimpeded to impeded. Operations at all three Larkin and Fulton crosswalks, the west crosswalks at Hyde and Fulton Streets and at Hyde and Grove Streets, and the north crosswalk at Larkin and Grove Streets would change from open to unimpeded, while at the remaining crosswalk (north crosswalk at Hyde and Fulton Streets), operations would remain unimpeded. For existing-plus-project conditions, all crosswalks analyzed would operate at acceptable conditions. Should Fulton Street between Larkin and Hyde Streets become a pedestrian mall, pedestrians would be likely to cross mid-block to visit the new library or Asian Art Museum (entrances would be provided facing the mall for each building). The flow regimen calculations for the Fulton Street crosswalks thus represent the worst-case scenario of pedestrians concentrating on specific crosswalks.

Pedestrian operations were also calculated for cumulative conditions. Crosswalks would not change from existing-plus-project conditions and thus would operate at acceptable flow regimes during both the midday and p.m. peak hour.

While the west crosswalk at the intersection of Hyde and Grove Streets currently operates with an open flow regimen, pedestrians were observed crossing Grove Street at mid-block in both directions. The Grove Street entrance of the New Main Library would be located at mid-block, and it may be assumed that, as designed, the number of mid-block crossings would increase, increasing the potential for pedestrian-vehicle conflict.

Pedestrians could be discouraged from crossing Grove Street in mid-block. The New Main Library could employ signage and curbside barriers (such as those used at intersections where there are not crosswalks at all possible crossings) to prevent such crossings, to minimize pedestrian-vehicle conflicts.

The New Main Library would provide bicycle parking for both patrons and employees. Currently, about five percent of library patrons travel by bicycle; demand could increase with more secure bicycle parking. About ten library employees ride bicycles to work, and park their bicycles in various locations (there is no designated bicycle parking). About 20 bicycle parking spaces and showers for employees would be provided; this could lead to more employees cycling to work.

OFF-STREET PARKING DEMAND AND LOADING REQUIREMENTS

Parking

Parking was surveyed in an area bounded by Sixth, Mission and Gough Streets and Golden Gate Avenue. On-street parking in the survey area is at least 85 percent occupied on an average weekday during the peak hour of occupancy (1:00 p.m. to 2:00 p.m.). Off-street parking occupancy varies among the 31 garages and lots surveyed, with an average occupancy of about 80 percent.

The discrepancy between on-street and off-street parking occupancy on an average weekday is most likely due to the different pricing structure and to the preferences of motorists; i.e., off-street lots charge more than on-street meters, some motorists ignore on-street time limits and "feed" the meters, off-street lots may not be attractive to short-term parkers, etc. On average weekdays, occupancy rates at off-street parking facilities vary, depending on their distance from employment centers, and the fee charged. The Civic Center Garage operates at about 50 percent occupancy on average weekdays./19/ During peak events on weekdays and weekends at Brooks Hall / Civic Auditorium, such as the Harvest Festival, the garage reaches 100 percent occupancy. The Marshall Square lot operates at about 75 percent on an average weekday, and reaches 100 percent on major event days./20/ Some lots operate at greater than 100 percent due to valet operations.

According to garage staff, neither the Civic Center Garage nor the Performing Arts Garage reaches full-capacity occupancy during evening hours on a regular basis. Occupancy is dependent upon the type of events being held in the Civic Center area on a given evening. During events such as simultaneous performances of a successful opera and a well-known conductor at the symphony, the Performing Arts Garage reaches near-capacity levels, but does not fill up./21/

The project site includes about 220 public parking spaces and another 17 spaces for City employees / City vehicles. All of these spaces would be eliminated by the project, which would not include parking for patrons or employees; there would be seven spaces for City vehicles including one space for the City Librarian. Therefore, the net loss in parking as a result of the project would be about 230 spaces.

Parking demand was estimated for project patrons based on projected peak hourly attendance at the New Main Library and Asian Art Museum, multiplied by the percentage of patrons expected to drive. For employees, demand was based on the number of employees expected to drive to work. The peak demand generated by the project on an average weekday would be about 315 spaces (see Table 6).

Postcard surveys were conducted on Fulton Street, at the Marshall Square parking lot, and at Civic Center Garage to determine the usage of these parking areas. The surveys were conducted on Wednesday, December 12, 1990 (to coincide with the Farmers' Market at United Nations Plaza) and on Thursday, December 13, 1990. The surveys showed that about one-fourth of the Fulton Street spaces are occupied by library patrons; on Wednesdays, about one-fourth are Farmers' Market patrons or vendors. The Marshall Square lot is used by library patrons, Civic Center area employees and visitors, and students at Hastings College of the Law. On Wednesdays, vehicles of Farmers' Market vendors occupy about one-fourth of the lot. Subsequent interviews with Farmers' Market vendors indicate, however, that while the postcard surveys showed that 35 percent of vendors park at the Marshall Square lot, the actual percentage could be twice as high./22/

Events are held in Brooks Hall and Civic Auditorium about 90 weekdays per year. Many of these events are conventions that are national in scope, and those attending are bused from hotels to the convention facilities. It is estimated that on less than half of the 90 event-days, event patrons generate parking demand approaching "peak-event" demand./23/ Based on observations during the Harvest Festival, the most heavily attended weekday event at Brooks Hall or the Civic Auditorium, on major event days, the only available on-street parking is generally located south of Market Street, more than one-fourth of a mile away. Fulton Street between Larkin and Hyde Streets is 100 percent occupied on these days, as well as on Wednesdays, when the Farmers' Market is held at United Nations Plaza.

TABLE 6: ESTIMATED PEAK PARKING DEMAND /a/

	Project			Displaced Parking						
	Library (Net New)	Asian Art Museum (New)	Total Demand	Marshall Square	Fulton Street	Project Site/b/	Total Displacement	Demand + Displacement	Available Supply	Unmet Demand
Average Weekday	85	228	313	97	48	10	155	468	925	-
Peak non-special-event weekday/c/	85	228	313	108	92	10	210	523	925	-
Special-event Weekday/d/	85	228	313	128	92	10	230	543	360	183

/a/ Peak weekday parking occupancy in surrounding area, 1:00 to 2:00 p.m. Project parking demand assumed relatively constant during hours between 1:30 and 5:30 p.m.

/b/ Net displaced parking on project site. Existing 17 City employees / City vehicles spaces include five spaces at 100 Larkin Street, seven spaces between existing library and 45 Hyde Street, and five spaces in library basement; project would provide 7 spaces in New Main Library basement for City vehicles. See also Table D-5, p. A.61.

/c/ Peak non-special-event weekday conditions include 100 percent occupancy of on-street parking on Fulton Street and 84 percent occupancy of Marshall Square lot.

/d/ Special-event weekday conditions include 100 percent occupancy of both Marshall Square lot and on-street parking on Fulton Street.

SOURCE: Wilbur Smith Associates

A parking duration study of the Civic Center Garage, on-street spaces on Fulton Street, and the Marshall Square lot reveal that average duration in the Civic Center Garage on an average Wednesday (the day of the Farmers Market) is 3.5 hours. On Fulton Street it is 1.5 hours, even though the meters are one-hour meters. In the Marshall Square Lot the average duration is 4 hours.

The average weekday parking accumulation surveys indicate that at 10:00 a.m., about 300 on-street spaces and 900 off-street spaces are available after most workers have arrived in the morning. This total of 1,200 spaces represents about 19 percent of the total supply.

Because patron surveys indicated that the New Main Library peak demand would be relatively constant between 1:30 and 5:30 p.m. on weekdays (with Wednesday the busiest day overall), and because the Asian Art Museum peak demand is assumed constant throughout the day (based on peak trip generation), the peak project parking demand was compared to the hour of peak parking demand in the surrounding area on an average weekday, identified as 1:00 to 2:00 p.m. During this hour, about 100 on-street spaces and 825 off-street spaces, or 925 total spaces (about 14 percent of supply) are available.

On weekdays when major special events are under way at Brooks Hall and/or Civic Auditorium, such as the Harvest Festival, on-street parking reaches close to 100 percent occupancy and off-street facilities are about 91 percent full. About 360 spaces are available in the parking study area.

As indicated in Table 6, p. 146, parking demand generated by the project, as well as demand created by relocation of vehicles that currently park on-site in spaces that would be eliminated, could be met by the remaining parking supply in the area on an average weekday and on a peak non-special event weekday, such as during the Farmers' Market. On such weekdays when major special events such as the Harvest Festival were under way, there would be less remaining parking supply in the study area. On such special event weekdays, there would be an unmet parking demand of about 185 spaces.

A 1988 study conducted by the Bureau of Traffic Engineering of the Department of Public Works concluded that there would be unmet demand of 370 parking stalls on an average weekday once the New Main Library, Asian Art Museum and Fulton Street Mall were built./24/ This study found an unmet demand of about 585 parking stalls on 100 to 115 peak-event weekdays yearly. The different results obtained in this analysis may be attributed to the fact that the New Main Library EIR analyzed parking conditions in a larger area. The 1988 study was performed prior to the 1989 Loma Prieta earthquake and included parking generated by the now-closed state building. Nearly 6,500 parking spaces were surveyed for this EIR, while the 1988 study included 2,300 spaces.

The New Main Library would be required by the City Planning Code to provide 182 publicly accessible parking spaces. The proposed Asian Art Museum would be required to provide 101 public parking spaces. Neither the library nor the museum would provide off-street parking except as noted (seven spaces in New Main Library). Each project sponsor (Library Commission and Asian Art Commission) would be required to obtain a Variance to provide fewer than the required number of spaces.

Existing City office buildings (City Hall, 450 McAllister Street and 101 Grove Street) generate a daytime code requirement of 808 parking spaces. Existing performance and exhibition venues (Davies Hall, Opera House, Herbst Theater, Civic Auditorium, Brooks Hall) generate a nighttime Code requirement of 2,519 spaces. City-owned parking facilities (Civic Center Garage, Performing Arts Garage, 400 McAllister Street lot) provide 1,503 parking spaces, meeting the Code requirement in the daytime but not at night (when there is a 1,016-space shortfall compared to the requirement). It should be noted that parking demand and parking requirements may differ. The EIR concentrates its analysis on actual parking demand.

There are no plans to provide parking for the trucks and vans of vendors at the Farmers' Market on United Nations Plaza after the elimination of the Fulton Street and Marshall Square parking areas. Currently, the market operates all day on Wednesdays and Sundays. Merchants arrive in the morning between 5:00 and 7:00 a.m. and depart between 2:30 and 6:00 p.m. Peak occupancy during the summer months is estimated at 100 stalls./25/ The predominant vehicle types used by vendors are pickup trucks and box vans; interviews with vendors and the parking survey indicate that between 40

and 75 percent of vendors park on Fulton Street or at the Marshall Square lot. These vendors would face more difficulty than the average driver in finding substitute off-street parking nearby because of their larger-than-average vehicles. For example, the Civic Center Garage has a maximum vertical clearance of less than 7 feet and could not accommodate most produce vendors' vehicles. Some vendors would be expected to seek on-street parking on Hyde Street. Coordinated use of the Fulton Street Mall as a pedestrian mall, accommodating Farmers' Market vehicles at certain prescribed times, could reduce these impacts. On-street parking for vendors' vehicles also could be provided on Hyde Street. Both would require City approval.

Cumulative Parking Demand

Long-term development within the Civic Center area would determine cumulative parking demand. The analysis of Civic Center cumulative parking impacts was determined with two groups of projects. Group I developments are those located within the new Main Library parking study area. They are the proposed City office building at 450 McAllister Street, reopening of the two state office buildings at 350 McAllister Street and 525 Golden Gate Avenue; planned development by Hastings College of the Law; and the Police Department's use of the Hibernia Bank building. Group II developments fall outside the project parking study area. These project include mixed-used developments at 600 Van Ness Avenue, 650 Van Ness Avenue, 201 Turk Street, and 111 Jones Street. These are also discussed under Cumulative Context, p. 128.

For purpose of analysis, the following scheme, based in part on City Planning Code restrictions, was assumed for the Hastings College of the Law development on the so-called West Block, bounded by Hyde, McAllister and Larkin Streets and Golden Gate Avenue: about 250,000 sq. ft. total; 75,000 sq. ft. of office use; 50,000 sq. ft. of educational (office-classroom) use; 50,000 sq. ft. of residential use (60 units); 32,000 sq. ft. of retail use; and 43,000 sq. ft. of parking (200 spaces). Net parking demand would be about 60 spaces. For the KGO building at 277 Golden Gate Avenue, also planned for development by Hastings, 50,000 sq. ft. of office and 17 parking spaces were assumed. Net parking demand would be about ten spaces.

Group I projects would result in a demand for about 530 spaces, displace an additional 155 spaces, and supply approximately 215 spaces, creating net demand for

about 470 spaces. The Group I demand added to the project peak non-special-event weekday demand of 525 would equal approximately 995 spaces. Surveys of the existing parking supply indicate that surrounding off-street parking facilities and on-street spaces (925 public spaces available) would not meet the average weekday cumulative demand. There would be a shortfall of about 70 spaces.

On peak weekdays with special events, there are an estimated 360 off-street spaces available and virtually no on-street parking. Group I demand added to the project peak special-event weekday demand of 545would equal about 1,015 spaces. As a result, there would be a deficit of about 655 spaces during peak weekdays with special events. The res vould be 655 vehicles searching for parking outside of the survey area and competing for spaces in those areas, or shifting of travel mode.

Group II development would result in demand for about 520 spaces, displace an additional 765 spaces, and supply approximately 605 spaces, creating a net demand for about 680 spaces. As noted, the cumulative parking impacts of Group II projects would fall outside the New Main Library project study area. Parking impact analysis for the Van Ness Avenue projects and the Turk and Jones Streets projects (all Group II) has been documented in recent reports./26/

The Jones and Turk Street Traffic Impact Study reports that approximately 320 long-term parking patrons would be displaced by those projects. The report indicates that displaced demand would be absorbed by local off-street facilities outside of the New Main Library project study area.

The Van Ness Avenue Traffic Impact Study reports that 150 long-term spaces would need to be absorbed by nearby lots and garages as a result of those projects. The location of parking facilities that would provide the 150 spaces is not known. For the purpose of analysis it was estimated that 50 percent of the displaced long-term parkers would seek spaces within the New Main Library project area (75 spaces).

Average weekday cumulative parking demand would include project demand for about 525 spaces plus Group I demand for 470 spaces and an additional 75 space demand generated by the Van Ness Avenue (Group II) projects. Total demand would be for 1,070 spaces and would exceed the estimated 925 available public spaces at vicinity parking facilities during an average weekday by about 145 spaces.

On peak weekdays with special events, there would be a deficit of approximately 730 spaces.

As discussed above, this EIR uses conservative assumptions and, therefore, calculates a conservatively high parking demand. A parking shortfall would result in people parking further from their destinations, or shifting to other modes of transportation.

Loading Activity

The New Main Library would provide three off-street loading spaces: one two-bay loading dock able to accommodate trucks up to 55 feet in length and one delivery van space. There would be two spaces for the library's bookmobile and for a second bookmobile to be acquired./27/ There would be maneuvering space for delivery vehicles as large as a 55-foot semi-trailer to turn around. Larger (65-foot) trucks that make deliveries to Brooks Hall would have to back down the ramp (as do all Brooks Hall trucks now) and through the library loading area.

The loading area would be accessible via a ramp from Hyde Street. Both the library loading areas and the Brooks Hall loading areas would be accessible solely by this ramp, which, at 23 feet, would be three feet wider than the existing ramp. The minimum vertical clearance in the library loading area would be 14 feet, 10 inches. The ramp would allow for two-way traffic except when large trucks were using the ramp, when no opposing truck traffic could be accommodated./28/

Loading activity at the New Main Library would consist of 25 to 30 truck trips daily, or about 3 truck trips per hour over a 9-hour day. Most of these deliveries would be small trucks or vans; a 55-foot semi-trailer would make a delivery about once every other weekday (10 per month). In addition, there would be an unknown number of incoming service calls for library equipment and outgoing service calls to branch libraries. About 60 percent of deliveries would last approximately 30 minutes, while the remaining 40 percent would remain at the library for 15 minutes or less./29/ These deliveries would be accommodated by the one two-bay loading dock and one additional van parking space; service calls by technicians driving autos and small trucks could be accommodated in one or more of the City vehicle parking spaces, since some vehicles would be out on City business at any given time.

Currently, some trucks loading and unloading for the activities at Brooks Hall wait at a South-of-Market staging area and are then dispatched to Brooks Hall as loading space becomes available. Most trucks, however, go directly to Brooks Hall, and a queue of four or five semi-trailer trucks can form. These trucks sometimes park on Fulton Street when there is no waiting room on the truck ramp. Trucks generally pull out into Hyde Street from Fulton Street (blocking the Hyde Street) and then back into the loading ramp./16/ Trucks unload as early as 7:30 a.m. to set up for events. Generally, loading and unloading requires two hours per truck for set-up and one-and-one-half hours for take-down. Exhibits that require special handling of materials may require longer set-up and take-down times per truck.

After completion of the library, trucks making deliveries to Brooks Hall would go through the library loading area to reach the Brooks Hall loading area. Trucks up to 55 feet in length would drive forward down the ramp, turn around in the library loading area, and back into the Brooks Hall loading area, which would be to the driver's left while backing. Larger trucks would have to back down the ramp from Hyde Street, back through the library loading area, and turn left into the Brooks Hall loading area./16/ The turning maneuver could be accomplished only if no semi-trailer were parked at the library loading dock; a mitigation measure has been included to ensure that library and Brooks Hall staff coordinate the arrival of truck traffic (see p. 180). The library loading area has been designed so that library-related service and loading vehicles other than semi-trailer trucks would not interfere with trucks entering and leaving the Brooks Hall loading area./16/

With the conversion of Fulton Street to a pedestrian mall, trucks bound for Brooks Hall and the New Main Library would travel north on Larkin Street to McAllister Street (small trucks and vans) or Golden Gate Avenue (larger trucks, since Golden Gate has three eastbound lanes and McAllister, one), then south on Hyde to the loading ramp. Each three-lane street would have ample turning clearance. Larger trucks would have to pull to the left on Hyde Street, blocking the street, before backing into the ramp./16/

Truck movements would potentially interfere with traffic on Hyde Street. Interference could occur if a 65-foot semi-trailer were to back into the library / Brooks Hall ramp or if a truck were to arrive at the ramp entrance on Hyde Street

while a vehicle was exiting the ramp. In the first example, the semi-trailer truck would have to drive past the ramp and pull into the left lane of Hyde Street, blocking all three lanes of traffic, before backing into the ramp. In addition, because the ramp would be limited to one lane during backing by a truck, if a vehicle destined for the library loading area were to arrive at the same time, the second vehicle would have to wait on Hyde Street until the backing truck was far enough into the ramp to allow the second truck to enter. It is estimated that, with a backing speed of 2.5 mph, a truck would take about one minute to reach the bottom of the approximately 200-foot long ramp. Traffic on Hyde Street would be interrupted during the backing maneuver and until the truck had cleared the entrance ramp. This could last from one to two minutes. In the second instance, a truck would have to wait on Hyde Street for the other vehicle to clear the ramp prior to entering the ramp. At a forward speed of 5 mph, it would take a vehicle about 30 seconds to clear the ramp.

Based on 1991 activity, there would be about 45 weekdays per year when loading or unloading activity would occur. Small trucks and vans would not conflict with each other or with other vehicles as they could operate in both directions simultaneously on the ramp. Because of the slope of the ramp, vehicles emerging from the ramp would be visible to drivers of vehicles approaching the ramp./16/ Warning devices and, during Brooks Hall loading and unloading operations, traffic control personnel would minimize conflicts on the ramp between vehicles or between vehicles and pedestrians on Hyde Street. Measures have been included to ensure that disruption of transit and automobile traffic on Hyde Street as a result of loading activities at the New Main Library and Brooks Hall is minimized (see p. 180 - 182). Scheduling loading activity outside the a.m. and p.m. peak hours would further minimize conflicts.

Loading for the Asian Art Museum would be via a truck ramp from Hyde Street (parallel to Fulton Street) to a loading dock in the basement of the proposed addition at 45 Hyde Street. This dock would be able to accommodate a 55-foot semi-trailer. Loading activities would consist of about nine truck and van trips per day, including about two trips by a 55-foot semi-trailer monthly./30/ These large trucks would be required to back into the loading dock, temporarily disrupting traffic on Hyde Street. A mitigation measure has been included to ensure that Asian Art Museum loading activity conflict with transit or automobile traffic on Hyde Street is minimized (see p. 181).

Should the 45 Hyde Street addition not be constructed, loading activities would occur from McAllister Street, at the location of the existing Main Library loading area.

The majority of Farmers' Market off-loading activity occurs outside of the peak hours of background traffic (that is, before 7:30 a.m.) and off-street (i.e., vendors drive into U.N. Plaza to unload before parking their vehicles). Vendors pack up and leave the market between about 2:30 and 6:00 p.m., which means some activity occurs during the p.m. peak hour. Again, this loading activity takes place off-street, on the plaza.

Trucks unloading and unloading for events at the Orpheum Theater, at Eighth and Market Streets, typically park on U.N. Plaza on the north side of the theater where the loading docks are located. Trucks arrive on loading days between 7:00 and 8:00 a.m. and activity continues throughout the day. Loading activity usually does not take more than one day, and occurs between five and six times a year. Occasionally, on those days, trucks will park on Hyde Street, in curb spaces reserved for that purpose, for 15-20 minutes at a time.

Currently, the sole pedestrian access to Brooks Hall is via a portion of the loading ramp that is separated by concrete pylons from truck traffic. This access route creates the possibility of conflicts between pedestrians and trucks. In conjunction with completion of the New Main Library, the City plans to provide a new pedestrian access to Brooks Hall via Civic Auditorium, with new exit stairs leading from the Brooks Hall loading area to street level just in front of the Larkin Street side of the New Main library, separating pedestrians from loading traffic, unless loading activities were to occur during an event.

DEMOLITION, EXCAVATION, AND CONSTRUCTION TRAFFIC/32/

Temporary construction related transportation impacts would result from construction employees and truck movements to and from the site during site clearance, excavation and building activity. For the New Main Library, site clearance and excavation would be done in two phases. Up to 144 trucks per day would travel to and from the site during the first four-week period. About four trucks per day would travel to and from the site over the remainder of the six months of early excavation. During the

30-month construction period, there would be a four-week excavation period that would involve up to 100 trucks per day. Over most of the remainder of the 30-month library construction period, about two trucks daily would make trips to the site. Trucks would mainly travel up Ninth Street from the I-80 freeway and reach the site via Larkin Street, Golden Gate Avenue, and Hyde Street. These streets, each of which carries three lanes of one-way traffic, would provide clearance for truck turning movements.

During the New Main Library construction period, sidewalks on the Hyde Street and Fulton Street sides of the New Library block would be closed, with pedestrians routed to the other side of the street. Pedestrian walkways would be constructed in the curb lane on Larkin and Grove Streets, displacing existing parking. After the start of construction, pedestrians could no longer walk through Marshall Square between BART/MUNI Metro and Civic Center. Closure of curb lanes to accommodate pedestrian walkways would displace up to 50 metered on-street parking spaces. The demand resulting from temporary elimination of these spaces would be met by other parking in the area, except during peak events. At those times, motorists would have to seek parking outside the project area or shift to other forms of travel, such as transit.

Sidewalks would probably be closed on the Hyde Street and McAllister Street sides of the Asian Art Museum block during at least part of the museum construction period and there could be pedestrian walkways in the parking lane on Larkin Street with effects similar to those for the New Main Library.

Similar levels of truck traffic would be expected for the Asian Art Museum remodeling and expansion as for the library, except that there would be fewer trucks for excavation. Demolition of the 45 Hyde Street building and excavation of the site for the proposed museum addition would probably last two to three months, while the remainder of the approximately two-year construction period would consist of construction of the 45 Hyde Street addition and primarily interior remodeling of the existing library building. Construction of the Fulton Street Mall would probably take about one year and require fewer truck trips than the library or museum portions of the project.

Materials storage for all three project components is proposed to be on-site, and would therefore not require construction vehicle trips to and from the project site on a

frequent basis to deliver materials. The main construction staging area would be Fulton Street between Larkin and Hyde Streets, which would be closed to vehicle traffic not associated with project construction. This street segment would remain a construction staging area until about 1999, at which time the pedestrian mall is proposed to be constructed. Temporary parking demand from construction workers' vehicles, and impacts on local intersections from construction worker traffic, would occur in proportion to the number of construction workers who would use automobiles.

Impacts of construction-related traffic would include roadway capacity decreases due to the slower movements and larger turning radii of construction trucks compared to passenger vehicles. Lane blockage on Hyde, Larkin, and Grove Streets due to queued trucks and to sidewalk rerouting, if it were to occur, would reduce the capacity of these streets. The 5-Fulton and 19-Polk MUNI lines and SamTrans and Golden Gate transit lines could be affected by truck movements. The 19-Polk bus stop on Hyde Street south of Fulton Street would have to be relocated during construction of the New Main Library. During construction of the 45 Hyde Street addition to the existing library, stops for the 19-Polk on Larkin Street at McAllister Street and for the 5-Fulton on McAllister Street at Hyde Street might have to be relocated.

Any truck traffic occurring during the 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. would coincide with peak-hour traffic and impede traffic flow. Blockage during times of peak traffic flow would have greater potential to create conflicts than during non-peak hours because of the greater numbers of vehicles on the streets during the peak hour that would have to maneuver around the queued trucks. Limiting truck movements to the hours between 9:00 a.m. and 3:30 p.m. would minimize disruption of the general traffic flow on Larkin and Hyde Streets and Golden Gate Avenue during the a.m. and p.m. peak hours. (See mitigation measure on p. 181.)

Should construction occur on other developments in the area during the project construction period, construction truck traffic would be expected to increase further, and traffic congestion and transit delays could be more extensive than described above. The nearest potential development is that proposed by Hastings College of the Law; this development is in the early planning stages. Other nearby developments that could overlap with the project are: a proposed City office building at 450 McAllister Street, remodeling / seismic upgrading of the two state office buildings at

350 McAllister Street and 525 Golden Gate Avenue, two mixed-use projects at 600 Van Ness Avenue and 650 Van Ness Avenue, and two affordable housing developments at Turk and Jones Streets.

NOTES - Transportation

/1/ This general information is based on impact analysis carried out in the *I-280 Transfer Concept EIR*, 84.385E, May 23, 1985, which examined different surface route alternatives along The Embarcadero right-of-way. Any new roadway designs proposed for The Embarcadero would be subject to additional, separate environmental review.

/2/ Levine, Edward, Director of Facilities, Hastings College of the Law, telephone conversation, April 2, 1991.

/3/ The forecasting method and background is described in the *Downtown Plan EIR* (pp. IV.B.1-8, IV.B.12-43, IV.B.54a-61, and Appendices G and H). In addition, the forecasts of future office space and employment, and an explanation of the methods used, can be found in the *South of Market Plan EIR*, pp. 66-85 and Appendix B, and in the *Mission Bay EIR* Vol. II. pp. VI.B.13-28, VI.B.38-79, VI.B.106-112, and VI.B.119-123, and Vol. III, Appendix B (see especially *Mission Bay EIR* Appendix B, pp. XIV.B.24-30 for a comparison to the *Downtown Plan EIR* forecasts). The method was not changed in forecasts prepared for the *South of Market* and *Mission Bay EIR* analyses, but several changes were made in the analysis and results.

/4/ 120 Main Library patrons were surveyed on Wednesday, November 13, 1990. Thirty-three Museum of Modern Art patrons were surveyed on Tuesday, January 22, 1991. Both surveying periods lasted for one to two hours around noontime. An additional survey of 20 Main Library patrons was conducted on Wednesday, June 26, 1991, during the p.m. peak hour (5:00-6:00 p.m.). Thirty-four additional MOMA patrons were surveyed during the p.m. peak hour on Thursday, June 20, 1991. The surveys days and time periods were identified by staff at each institution as appropriate to survey a relatively large number of people and to obtain an overall indication of patron behavior.

/5/ Page, Kathryn, Chief of Facilities Development, San Francisco Public Library, telephone conversation, June 19, 1991. The New Main Library is projected to attract about 5,500 patrons daily (generating about 11,000 daily pte). Current patronage is about 2,700 per day (5,400 pte daily). Main Library staffing is projected to increase from the current 343 to 349; approximately 75 percent of staff members are present on a given weekday.

/6/ Directional distribution based on Environmental Science Associates, Inc., *New Alameda Free Library EIR*, 1990; and Wilbur Smith Associates, *San Mateo County Library Traffic Impact Study*; 1989.

/7/ Trip generation for Main Library and Asian Art Museum employees is calculated at five trips per day per employee, and the p.m. peak hour percentage used for employee trips is 10.5 percent, based on San Francisco Department of City Planning, *Guidelines for Environmental Review: Transportation Impacts*, September 1983. The Department has recently issued revised transportation guidelines (July 1991) that are currently undergoing final revisions. The new guidelines use the five trips per day standard for "C-3 Secondary Office" and "Other Office" employees, with lower

per-day rates for all other office workers except "Government Office." Because office worker trip generation normally accounts for all trips to a facility (employees and visitors), however, the five trips per day rate presents a conservative analysis for employee trip generation, since visitors (patrons) are accounted for separately. For both the New Main Library and the Asian Art Museum, employee trips make up a relatively small percentage of total daily trips.

/8/ Asian Art Museum patronage projection from Judith Teichman, Project Manager, Asian at the Civic Center, telephone conversations, June 19 and 24, 1991, and Jennifer Vickers, Planning Assistant, Asian Art Museum, telephone conversation, June 25, 1991. Asian Art Museum employment is projected to increase from 68 full-time + 10 part-time (docents) to 120 full-time + 30 part-time. Employee information from Jennifer Vickers, telephone conversations, February 1991, and letter, December 3, 1990.

/9/ Peak-hour patron trips are about eight percent of daily trips. (San Francisco Department of City Planning, *California Academy of Sciences EIR*, Case No. 86.58E, Final EIR certified April 28, 1988.)

/10/ Mode split and geographic distribution for employee trips was based on the distribution of Downtown office workers' trips in San Francisco Department of City Planning, *Guidelines for Environmental Review: Transportation Impacts*, September 1983. Geographic zones within San Francisco were modified from the *Guidelines* to account for the project's location in Civic Center rather than Downtown.

/11/ Based on Main Library surveys, which showed a vehicle occupancy rate of 1.3 persons per vehicle for library patrons who drive, and MOMA surveys, which showed a vehicle occupancy rate of 1.4 persons per vehicle for patrons who drive.

/12/ San Francisco Department of City Planning, *Transportation Impact Analysis for the Proposed Chinatown Rezoning Plan*, January 1987.

/13/ Wycko, William, Chief, Transportation Group, San Francisco Department of City Planning, telephone conversation, March 1991.

/14/ MUNI, *Short-Range Transit Plan and Capital Improvement Program*, 1990-1999, August 1990.

/15/ Teichman, Judith, Project Manager, Asian at the Civic Center, telephone conversation, October 4, 1991.

/16/ Abel, Russel, Project Manager for San Francisco New Main Library, Bureau of Architecture, telephone conversations, June 17, July 24, October 4, 10 and 15, 1991.

/17/ Nomura, Joan, BART Planner, telephone conversation, August 2, 1991.

/18/ Pushkarev and Zupan, *Urban Space for Pedestrians*, MIT Press, Cambridge, MA, 1975.

/19/ Weekday off-street occupancy counts were conducted by WSA on Friday, October 12, 1990. Generally, where lots reach greater than 100 percent of nominal capacity, attendants direct parking operations.

/20/ The parking surveys were conducted when two state office buildings (350 McAllister Street and 525 Golden Gate Avenue) were closed as a result of the 1989 Loma Prieta Earthquake. These buildings are assumed to be reoccupied in the future and their parking demand is therefore analyzed under cumulative impacts (see Chapter IV., Environmental Impacts, pp. 138-142).

/21/ Sereno, Fred, Manager, Civic Center Garage, telephone conversation, October, 15, 1991, Don Whitaker, Manager, Five Star Parking (Performing Arts Garage), telephone conversation, October 15, 1991.

/22/ Detailed information on the postcard surveys and existing parking conditions is contained in the case file, available for public review at the Department of City Planning, 450 McAllister Street, San Francisco, CA.

/23/ Moerschbaecher, Jack, Director of Convention Facilities, City and County of San Francisco, telephone conversation, August 19, 1991.

/24/ Department of Public Works, *Civic Center Plaza Parking Garage Expansion Parking Demand Study*, 1988.

/25/ Adams, Christine, Manager, Heart of the City Farmers' Market, interview, June 26, 1991.

/26/ DKS Associates, *Traffic Impact Study - 111 Jones Street / 201 Turk Street* (Case No. 90.741E), April 1991, and *Traffic Impact Study - 600 Van Ness Avenue / 650 Van Ness Avenue* (Case Nos. 89.627E and 88.750E), October 1990. These reports are on file at the San Francisco Department of City Planning, 450 McAllister St., San Francisco, CA.

/27/ The Public Library could eventually acquire a second bookmobile (Kathryn Page, Chief of Facilities Development, San Francisco Public Library, telephone conversation, July 23, 1991).

/28/ Kroll, Joern, Transportation Planner, San Francisco Department of City Planning, telephone conversation, October 3, 1991.

/29/ Walsh, Richard, Secretary, San Francisco Library Commission, telephone conversation, July 23, 1991.

/30/ Vickers, Jennifer, Planning Assistant, Asian Art Museum, telephone conversation, August 23, 1991.

/31/ Heasy, Pat, Production Manager, Shorenstein, Hays, Nederlander, telephone conversation, October 15, 1991.

/32/ The discussion of construction impacts of the New Main Library was prepared on the basis of estimates of construction periods, truck movements and access routes provided by Victor Talatala, Bureau of Architecture, facsimile transmission, July 29, 1991, and Russel Abel, Project Manager, Bureau of Architecture, telephone conversation, October 18, 1991. Construction impacts of the Asian Art Museum and Fulton Street Mall were estimated, as no information is available.

E. AIR QUALITY

CUMULATIVE CONTEXT

The Mission Bay and South of Market Plan EIRs analyzed cumulative effects of development in the Downtown & Vicinity on regional air quality in the future. This

material is incorporated by reference and summarized here. The analyses in those EIRs incorporate recent emission factors (these are revised periodically by the Bay Area Air Quality Management District (BAAQMD)), and acknowledge the continued failure of the Bay Area to attain federal ozone and carbon monoxide (CO) standards, a problem to which the project would contribute. (For more detail on air pollutant emissions, see Mission Bay EIR, Vol. II, pp. VI.F.13-18).

Motor vehicle exhaust emissions would be the primary source of air pollutants in the Downtown & Vicinity. These emissions would affect local and regional air quality. Ozone and CO concentrations occasionally violate air quality standards at some locations in the Bay Area. Emissions of hydrocarbons (HC) and nitrogen dioxide (NO_x), precursors of ozone, would contribute to regional ozone concentrations. Emissions also would add to local CO concentrations at congested intersections.

Computer modeling of cumulative CO concentrations at eight intersections analyzed in the Mission Bay EIR (five of which are intersections adjacent to freeway ramps) suggests that state and federal standards for eight-hour average concentrations (nine parts per million [ppm]) currently may be violated on occasion at the intersection of Sixth and Brannan Streets (13.4 ppm) and at the intersection of Third and Berry Streets (9.2 ppm). With the temporary closure of I-280 for repairs of damage from the October 1989 earthquake, these two intersections currently are not congested; both the normal traffic and the resulting air quality effects have been dispersed to other intersections. When I-280 is re-opened, traffic at the study intersections is expected to return to pre-quake levels, resulting in local air quality similar to pre-quake conditions. None of the eight intersections are currently in violation of state or federal one-hour standards (20 ppm and 35 ppm, respectively). CO concentrations are expected to improve in the future throughout the region, due primarily to enhanced vehicle emission controls mandated by state and federal regulations. Average CO concentrations at the eight intersections, even with Mission Bay and cumulative growth in traffic, are projected to decrease. No violations of state or federal CO standards are expected in 2000, or at buildout of Mission Bay in 2020.

The *1982 Bay Area Air Quality Plan (1982 Plan)* established schedules and strategies to comply with federal ozone and CO standards established under the Clean Air Act by

December 31, 1987. The deadline has now passed, and the Bay Area remains a non-attainment area for ozone and CO (standards are occasionally violated). The U.S. Environmental Protection Agency (EPA) has required that the *1982 Plan* be updated by 1991.

Effective January 1, 1989, the California Clean Air Act provides for the designation of districts into three classes: moderate (defined as an area which can attain state and federal air quality standards by December 31, 1994) serious (areas which can attain the standards by December 31, 1997), and severe (areas that cannot specify an attainment date). In each case, the Act specifies strategies that must be adopted. In all cases, plans are required to demonstrate a five-percent-per-year reduction in the emissions of pollutants or precursors, unless the California Air Resources Board (ARB) determines that all feasible measures are being employed. The Bay Air Basin has been designated as severe for ozone and fine particulate matter (PM_{10}), due it its inability to attain state standards by 1997, and serious for CO, due to its inability to attain state standards by 1994./1/

PROJECT EFFECTS

Upon completion, the project would affect localized air quality in two ways. Emissions would be generated by project-related traffic and by combustion of natural gas for building space and water heating. Transportation sources would account for more than 90 percent of project-related emissions.

The analysis is this section provides information that could be used to assess the project in relation to the thresholds of significance recommended by the Bay Area Air Quality Management District's *Guidelines for Assessing Impacts of Projects and Plans*, revised April 1988. According to these *Guidelines*," any project or plan which would generate carbon monoxide (CO) concentrations above the state or national carbon monoxide (CO) standards would be of significant effect by definition." A second test of significance states that the level of emissions from a total of direct and indirect sources would be considered significant if emissions of HC, NO_x, SO_x or PM_{10} equal or exceed 150 lb/day. For mobile sources, curbside CO concentrations are normally modeled; this second test indicates that 550 lb/day of CO would be considered significant only if it leads to a violation of state standards under Test 1 modeling. Finally, "any project or plan should be considered of significant effect if emission of any criteria contaminant for combined direct and indirect sources reaches

TABLE 7: EXISTING AND PROJECTED CURBSIDE CARBON MONOXIDE CONCENTRATIONS AT SELECTED INTERSECTIONS/a/

		Concentration (ppm)	
Intersection	Averaging Time	1990	2000/b/
Van Ness and McAllister Streets	1-hour	10.2	9.7
	8-hour	7.2	6.8
Polk and McAllister Streets	1-hour	9.2	9.0
	8-hour	6.4	6.3
Larkin and McAllister Streets	1-hour	9.4	9.1
	8-hour	6.6	6.4
Larkin and Grove Streets	1-hour	9.1	8.9
	8-hour	6.4	6.2
Hyde and McAllister Streets	1-hour	9.3	9.0
	8-hour	6.5	6.3

/a/ Calculations for all scenarios were made using a revised version of the Modified Linear Rollback (MLR) method described in the Downtown Plan EIR. Background CO concentrations were calculated to be 5.8 ppm (eight-hour average) in 1990, and 5.0 ppm (eight-hour average) in 2000. Any values in violation of the state or federal CO standards would be underlined. The one-hour state standard is 20 ppm, the one-hour federal standard is 35 ppm, and the eight-hour state and federal standards are 9 ppm. Emission rates were derived from the California Air Resources Board's EMFAC7D computer model, from the BAAQMD's *Guidelines* revised April 1988.

/b/ Based on the growth forecasts contained in the Mission Bay EIR (Case No. 86.505E, Final EIR certified August 23, 1990). The project is contained within this forecast.

SOURCE: Environmental Science Associates, Inc.

or exceeds one percent of county emissions of the contaminant." There are two other tests of significance: one applies only to stationary sources and the other applies to projects that would generate population or employment in excess of regional projections.

There is uncertainty regarding what type of roadway will replace the Embarcadero Freeway and when it will be constructed. Curbside CO concentrations at selected local intersections that would be affected by project-generated traffic and cumulative development traffic were projected for conservative conditions (see Table 7). Traffic

TABLE 8: PROJECTED DAILY TRANSPORTATION-RELATED AIR POLLUTANT EMISSIONS

Pollutant	Project 2000 /a,b/ (lbs. per day)/a/ Library	Museum	Total Project	County 2000 /c/	Project as Percent of County
Hydrocarbons	10	55	65	132,000	<0.1
Nitrogen Oxides	20	100	120	77,000	0.2
Carbon Monoxide	300	1,300	1,600	269,000	0.6
PM_{10}	20	80	100	89,000	0.1
Sulfur Oxides/d/	5	15	20	30,000	<0.1

/a/ Project emissions were calculated using BAAQMD EMFAC7D vehicle emission factors. Emissions of HC, NO_x, and CO include an assumed six minutes of idling time per vehicle trip. Emissions of particulates include dust disturbed from roadway surfaces.
/b/ Based upon a weighted daily average of about 12,000 vehicle-miles traveled.
/c/ San Francisco County emissions correspond only to transportation-related emissions based on California Air Resources Board, emissions *Trends For the Bay Area Air Basin*, Draft, December 1989. Based on 1985 emissions inventory.
/d/ Sulfur oxides and sulfur dioxides are assumed to be interchangeable.

SOURCE: Environmental Science Associates, Inc.

patterns in the Downtown & Vicinity may change if on-ramps and freeway sections closed due to earthquake damage are reopened.

Currently (1991) neither the one- nor the eight-hour air quality standards are being violated at any of the study intersections. In 2000, the average vehicle is expected to emit less CO than in 1990, due to ongoing state and federal emissions controls. Thus, air pollutant emissions from project-generated traffic at the study intersections are not projected to violate the standards.

Table 8 shows projected daily emissions of air pollutants in 2000 from project-generated traffic, and compares them with San Francisco County transportation-related emissions. The project would contribute 0.6 percent or less to the transportation-related emissions inventory of any of the five criteria pollutants for San Francisco in 2000, which is below the one-percent threshold established by the BAAQMD defining a potentially significant impact on air quality. Project emissions would not exceed the other significance standards established by the BAAQMD./2/

Emissions of particulates resulting from construction and from vehicle trips generated by the project and cumulative development would increase particulate concentrations, which could increase the frequency of particulate standard violations in San Francisco, with concomitant health effects and reduced visibility./3/

NOTES - Air Quality

/1/ Dracott, Joan, Public Information Officer, Bay Area Air Quality Management District, telephone conversation, July 19, 1991.

/2/ The 550-lb.-per-day standard for CO applies only when curbside modeling is not performed.

/3/ State standards for particulate matter changed in 1983 and federal standards changed in 1987 to concentrate on respirable particulate matter (PM_{10}), which has been demonstrated to have health implications when inhaled. The present state and federal PM_{10} standards are 50 ug/m^3 and 150 ug/m^3, respectively, of respirable particulate matter. Although both the previous and present particulate standards are measured in ug/m^3, under the PM_{10} standards only those particulates 10 microns or less in size are measured. The BAAQMD (Thomas Perardi) has stated that TSP includes about 50% to 60% of particulates of 10 microns or less; thus, the TSP standards are generally equivalent to the PM_{10} standards. BAAQMD is presently monitoring PM_{10} at seven Bay area monitoring stations, including the station at 16th and Arkansas Streets in San Francisco.

F. CONSTRUCTION NOISE

Ambient noise in the project vicinity is typical of noise levels in downtown San Francisco, which are dominated by vehicular traffic, including trucks, cars, MUNI buses and emergency vehicles. Sidewalk noise measurements taken on Larkin Street near Grove Street during the weekday evening peak commute period show noise levels of about 66 dBA./1,2/. The Environmental Protection Element of the San Francisco Master Plan indicates a day-night average noise level (L_{dn}) of 65 dBA in the Civic Center area in 1974 and The Downtown Plan EIR indicates a day-night average noise level (L_{dn}) of 75 dBA on Eighth Street in 1984./3,4,5/

Short-term noise levels were measured between 4:20 p.m. and 6:30 p.m. at four locations to characterize the ambient noise in the project area. The predominant noise source in the project area is vehicular traffic. The noise levels at the four measurement locations range from 63 dBA on the Fulton Street side of the existing Main Library to 70 dBA at the intersection of Fulton and Hyde Streets. The intersections of Fulton and Larkin Streets and Larkin and Grove Streets both measured 67 dBA.

Noise was measured over a 24-hour period on Larkin Street between Fulton and Grove Streets. During the night (10:00 p.m. to 7:00 a.m.), the hourly noise level ranged from about 57 dBA to about 68 dBA. During the day (7:00 a.m. to 10:00 p.m.), the hourly noise level ranged from about 58 dBA to 69 dBA. The noise level over the 24-hour measurement period was 71 dBA, L_{dn}. (The 24-hour average is higher than the day or night levels due to weighting of nighttime noise.)/3/

Construction of the New Main Library, which would take place over a period of about 30 months, would increase noise levels in areas surrounding the project site. Construction noise levels would fluctuate depending on construction phase, equipment type and duration of use, distance between noise source and listener, and presence or absence of barriers between noise source and listener. To estimate probable noise impacts, this analysis assumes typical equipment and construction techniques. Table 9 shows typical exterior noise levels associated with the different phases of construction. (See Appendix F, p. A-63, for a table of typical noise levels found in the everyday environment.) Interior noise levels at 50 feet from the noise source would be about 10 to 15 dBA less than those shown in Table 9./6/ Closed windows would reduce interior noise levels by about 20 dBA below the exterior noise levels shown in Table 9. Remodeling and expansion of the existing library building to serve as the Asian Art Museum would take about two years and would not commence until after completion of the New Main Library. Noise generated would be expected to be somewhat less than that generated by construction of the library because much of the work would be indoors. It is assumed that pile driving would be required for construction of the expansion at the 45 Hyde Street site./7/

Construction noise is regulated by the San Francisco Noise Ordinance (Article 29 of the City Police Code). The ordinance requires that noise levels of construction equipment, other than impact tools, not exceed 80 dBA at a distance of 100 ft. from the source. Impact tools (jackhammers, pile drivers, impact wrenches) must have both intake and exhaust muffled to the satisfaction of the Director of Public Works. Section 2908 of the Ordinance prohibits construction work between 8:00 p.m. and 7:00 a.m., if noise would exceed the ambient noise level by five dBA at the project property line, unless a special permit is authorized by the Director of Public Works.

TABLE 9: TYPICAL COMMERCIAL/INDUSTRIAL CONSTRUCTION NOISE LEVELS

Construction Phase	Estimated Duration of Phase (weeks)/a/	Average Noise Level (dBA)
Ground clearing	4	84
Excavation/b/	8	89
Foundations/c/	26	78
Erection	26	85
Exterior Finishing	17	89

/a/ Construction of New Main Library only; construction/remodeling of existing library building would produce somewhat less noise.
/b/ Includes four weeks during planned initial archaeological excavation.
/c/ Duration includes four weeks of pile driving; noise level is for activities other than pile driving. Noise levels during pile driving could reach 101 dBA at 50 ft. from the source.

SOURCE: Bolt, Beranek and Newman, December 31, 1971, *Noise from Construction Equipment and Home Appliances*, U.S. Environmental Protection Agency.

The project would consist of a six-story (plus basement) library building and a remodeled building containing the Asian Art Museum. The existing parking lot on the New Main Library block would be eliminated. The single-story building currently on the New Library block would be demolished or moved, while the three-story office building on the Asian Art Museum block would be demolished. Project construction would generate high noise levels on and adjacent to the construction site intermittently during the construction period.

The project would require pile driving for placement of retaining walls during excavation of the New Main Library site, for shoring of the truck ramp to the New Main Library and Brooks Hall loading areas, and for foundations for the addition to the existing library. Pile driving would occur intermittently over about four weeks for construction of the New Main Library; hammering would occur during a five- to eight-minute period for each pile. Conventional unmuffled and unshielded pile drivers emit typical peak noise levels of 101 dBA at a distance of 50 ft. and 95 dBA at a distance of 100 ft. each time the driver strikes the pile. Pile driving for the addition to the existing library building would occur over a shorter period of time.

Vibration from the impact during pile driving would be felt in adjacent and nearby buildings. These vibrations have been found to be more disturbing to some people than high noise levels. The Department of Public Works permits pile driving operation under certain conditions, which may include specifying relatively quiet equipment, pre-drilling pile holes, and limiting hours of operation to reduce the number of people exposed to noise effects. Pile holes probably would not be pre-drilled for the New Main Library because the foundation piles would be "withdrawal" piles that prevent building uplift and depend on friction for effectiveness./8/

Noise levels greater than 60 dBA can interfere with normal speech and concentration. Noise levels greater than 70 dBA would require workers to close windows or shout to communicate. General stress reaction has been observed in humans exposed to brief sounds of 75 dBA./9/ At noise levels of 85 dBA, normal conversation is extremely difficult, and sleep or rest virtually impossible. Intermittent noises, such as pile driving noise, have a psychological effect on humans: they reduce perception of control over the environment. This perceived loss of control frequently results in a depressed mood and depressed motivation. High noise levels also can lead to physiological effects, such as elevated blood pressure./10/ Repeated impulse and intermittent sounds of high level appear more likely to be disruptive than continuous or steady sounds of comparable level./11/

The U.S. Department of H&HS has identified maximum non-occupational noise exposure criteria recommended in order to avoid hearing damage or loss. For a sound level of 95 dBA, the recommended maximum daily exposure is 30 minutes./12/ Assuming that pile driving would occur for eight hours per day, but that actual impacts from pile driving would occur for no more than five minutes per hour (for a total of 40 minutes per day), the hourly average noise level in the area of Grove and Larkin Streets would exceed 95 dBA. This effect would be temporary and limited to within the construction period, as noted.

While project construction would not cause hearing loss, there would be a a perceptive increase in the noise levels around the project site. Land uses adjacent to the New Library block include the existing San Francisco Main Library to the north, commercial and limited residential use to the south, and open space to the west and east. Residents of the Donnelly Hotel and Chase Hotel to the south of the project site, approximately 200 feet away, would be adversely affected by construction noise.

Exterior noise levels in this area, during the noisiest phase of construction (pile driving), would be about 89 dBA. With windows open, hotel residents would experience interior noise levels of about 79 dBA and, with windows closed, about 69 dBA. These noise levels would be annoying and disruptive to hotel residents and staff, especially day sleepers.

Commercial uses across Grove Street, approximately 70 feet from the project site, would experience, during the noisiest phase of construction (pile driving), exterior noise levels of about 98 dBA. This exterior noise level would be reduced to an interior level of about 88 dBA, with windows open, or to about 78 dBA, with windows closed. This would result in occupants having to shout to communicate and would make telephone conversations difficult. The existing library site, at Fulton Street, approximately 150 feet from the New Main Library's northern edge, would experience peak exterior noise levels of about 93 dBA. With windows open, interior noise would be about 83 dBA and with windows closed, about 73 dBA. These noise levels could make study difficult. Civic Center Plaza would experience peak noise levels of approximately 95 dBA. Employees, residents, library users, occupants of the adjacent commercial space, and offices would be adversely affected. Noise levels during project construction would be higher than baseline ambient noise levels in the project area.

Construction noise generated by the remodeling and expansion of the existing library building would have similar, although somewhat less substantial, impacts on residential uses and Hastings College of the Law across McAllister Street, about 50 feet north of the project site, on the Old Federal Office Building, about 50 feet east, and on Civic Center Plaza. Construction would occur over a period of about 24 months. It is expected that pile driving would occur for less than four weeks.

Additional developments in the immediate project vicinity are in different stages of planning, environmental review, project approval, or construction. The proposed City office building at 450 McAllister Street is in early planning stages, as is the proposed Hastings College of the Law project on the blocks bounded by Larkin Street, Golden Gate Avenue, Leavenworth Street, and McAllister Streets. Interior work on the State Building at 350 McAllister Street is under way. Should any of these projects' construction schedules coincide with that of the New Main Library or Asian Art

Museum, noise levels could increase by two to five dBA. This increase would be audible (depending on the loudness of activity) and would probably be annoying, since noise from construction of one project would be annoying to the nearest receptors (those within 100 feet). Should one project be completed and a second begin soon after, noise impacts would be prolonged.

In summary, during the majority of construction activity, noise levels would be above existing levels in the project area. There would be times, particularly during the operation of pile drivers or impact wrenches, when noise would interfere with indoor activities in nearby offices, residences, and open space areas adjacent to the project site. These impacts would be temporary in nature and limited to the period of construction. Pile driving would be scheduled during the times of disturbance to the fewest people, as a measure proposed as part of the project (Chapter V. Mitigation Measures, p. 184). Noise generated during pile driving could be reduced by erecting barriers around the project site. Barriers could consist of berms or walls that would reflect or absorb noise and create an acoustic "shadow" zone. The more solid, high and wide a noise barrier, the more effective would be the noise attenuation. A wall may reduce noise by up to 20 dBA, while berm may reduce noise by up to 23 dBA./13/ See mitigation measure on pp. 184, which has been rejected by the project sponsor.

NOTES - Construction Noise

/1/ Noise was measured at Larkin and Grove Streets by ESA staff on Wednesday, February 13, 1991, between 4:25 p.m. and 6:30 p.m. with a dB-308 Metrologger noise level meter which was calibrated prior to and following the measurement.

/2/ A decibel (dB) is a logarithmic unit of sound energy intensity. Sound waves, traveling outward from a source, exert a force known as sound pressure level (commonly called "sound level"), measured in decibels. A dBA is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. Noise measurements presented in this section are given in dBA, L_{eq}. L_{eq}, the energy-equivalent noise level, is the equivalent continuous noise level which, in a stated period, would contain the same acoustic energy as the actual time-varying sound level measured during the same period.

/3/ L_{dn}, the day-night average noise level, is based on human reaction to cumulative noise exposure over a 24-hour period, which takes into account the greater annoyance of nighttime noises. Noise between 10:00 p.m. and 7:00 a.m. is weighted 10 dBA higher than daytime noise.

/4/ San Francisco Department of City Planning, San Francisco Master Plan, Environmental Protection Element, p. I.6.13.15.

/5/ San Francisco Department of City Planning, Downtown Plan EIR, Case No. 81.3E, certified October 18, 1984, Volume 1, pp. IV.J.1-19, particularly Table IV.J.2, pp. IV.J.9-10.

/6/ United States Department of Transportation, Federal Highway Administration, *Policy and Procedure Memorandum 90-2*, February 8, 1973.

/7/ William Turnbull Associates, *Asian Art Museum - Main Public Library Building: A Feasibility Study*, April 1988.

/8/ Abel, Russel, Project Manager for San Francisco New Main Library, Bureau of Architecture, telephone conversation, October 18, 1991.

/9/ The Central Institute for the Deaf, *Effects of Noise on People*, U.S. EPA, 1971.

/10/ Cohen, Sheldon et al., "Cardiovascular and Behavioral Effects of Community Noise," American Scientist, Volume 69, October 1981.

/11/ National Institute for Occupational Safety and Health, U.S. Department of Health, Education and Welfare. *Occupational Exposure to Noise*, 1972.

/12/ Cohen, A. et al., "Sociocusis - Hearing Loss from Non-Occupational Noise Exposure," Sound and Vibration 4 (11) 12-20, in Cornett, C. and Hina, C., *Methods for Predicting Noise and Vibration Impacts*, January 31, 1979.

/13/ U.S. Department of Transportation, Federal Highway Administration, *Highway Noise*, December 1978.

G. GEOLOGY AND SEISMICITY

The New Library block ranges from about 43.2 feet, San Francisco City Datum (SFD) at the southeast end to about 50.5 feet, SFD, at the northwest end./1/ The site is underlain by 2 to 14 feet of fill consisting primarily of medium dense silty sand with scattered rock and brick fragments. The fill is underlain by dense dune sand deposits which range in thickness from about 68 to 97 feet and contain scattered thin lenses of peat. These sand deposits are considered to be of sufficient strength to provide load-bearing support for foundations./2/ The sands are underlain by stiff to very stiff silty clay and sandy clay to a depth of 100 feet, the maximum depth explored by subsurface borings./2/ Bedrock is probably on the order of 200 feet in depth or more at the site.

The southeast corner of the New Library block extends into the edge of an area previously delineated as having the potential for liquefaction and subsidence hazards due to the presence of fill overlying soft, compressible bay muds./3/ These soil conditions are known to underlie a relatively broad area southeast of the site; however, geotechnical borings drilled on the site did not encounter soil conditions of this nature,

nor did a geotechnical boring previously drilled in Grove Street, approximately 50 feet south of the southeast corner of the site./4/ Based on this site-specific subsurface data, the potential for significant liquefaction or subsidence at the site is considered to be relatively low.

Groundwater measurements made at the site in December 1990 ranged from +23 feet to +30 feet, SFD. These measurements were made at the end of the dry season after four consecutive years of below-normal rainfall. Based on previous investigations in the vicinity, it is likely that groundwater levels could be five to ten feet higher during periods of normal or above-normal rainfall./2/

Excavation for the basement level would extend to an elevation of about 20 feet, SFD over most of the site and to about 21 feet, SFD on the north side of the site. The maximum depth of excavation (from the ground surface) would be about 35 feet.

Dewatering would be required during excavation. Dewatering could cause settlement of adjacent buildings. Measures to mitigate this potential impact are proposed as part of the project or are under consideration by the project sponsors (see Chapter V. Mitigation Measures, pp. 184 - 185). Because dewatering would be expected to be confined to the project site, and because there are no other structures on the New Library block, special measures may not be required to avoid effects on nearby structures, regardless of foundation type./2/ Measures to mitigate potential impacts on adjacent streets are proposed as part of the project for the New Main Library (see Chapter V. Mitigation Measures, pp. 184 - 185).

Shoring would be required to retain excavated slopes during construction. Soldier piles and lagging would be used to retain slopes and, in conjunction with dewatering, would minimize the inflow of water during construction. The building contractor must comply with the San Francisco Building Code and the Excavation Standards of the California Occupational Safety and Health Agency during excavation and shoring procedures.

A concrete mat foundation is proposed for the New Main Library. Piles would be driven to support the walls of the excavation pit, and would support a portion of the ramp leading to the basement-level loading dock and Brooks Hall.

Further soils analysis would be conducted prior to construction of the proposed addition to the existing Main Library as part of the renovation to accommodate the Asian Art Museum. A geotechnical report would be prepared by a California-licensed geotechnical engineer prior to construction. The recommendations of that report would be followed regarding excavation and construction; it is anticipated that a drilled pier foundation, including driven piles, would be used./5/ (See Section IV.F. Construction Noise, pp. 164 to 170, for a discussion of construction noise and vibration impacts.)

The final building plans would be reviewed by the Bureau of Building Inspection (BBI). In reviewing building plans, the BBI refers to a variety of information sources to determine existing hazards and assess requirements for mitigation. Sources reviewed include maps of Special Geologic Study Areas and known landslide areas in San Francisco as well as the building inspectors' working knowledge of areas of special geologic concern. The above-referenced geotechnical investigation would be available for use by the BBI during its review of building permits for the site. Also, the BBI could require that additional site specific soils report(s) be prepared in conjunction with permit applications, as needed.

The seismic upgrading of the existing library building would meet, or exceed, the requirements of Sections 104(f) and 2313(c) of the San Francisco Building Code. Section 104(f) applies to pre-1973 buildings proposed for expansion or intensification of use. Section 2313(c) requires reinforcing of older buildings to the seismic force resistance levels that were required in the 1973 *Uniform Building Code* for new structures.

The new library building would be designed to exceed current seismic engineering standards of the San Francisco Building Code. (See Mitigation Measures for the project's emergency response plan, p. 185) The Code is designed to allow for some structural damage to buildings, but not collapse, during a major earthquake. The project would also include seismic retrofitting of the existing library building, which would be used to contain the Asian Art Museum. The project would demolish or remove the existing single-story office building on the new library site and demolish the three-story office building adjacent to the existing library building in order to allow the expansion of the existing library building and its subsequent conversion to the Asian Art Museum. The new and retrofitted buildings on the site would be more

resistant to earthquake damage than are the existing buildings. Persons using the site after the proposed development would probably be relatively safer than those using the site in its present condition in the event of a major earthquake.

The closest active faults to the site are the San Andreas Fault, about eight miles southwest of the site; the San Gregorio Fault, about 12 miles southwest of the site; and the Hayward and Calaveras Faults, about 13 and 25 miles east of the site, respectively. The project area would experience Very Strong ground shaking during a major earthquake (Intensity Level C - masonry badly cracked with occasional collapse; frame buildings lurched when on weak underpinning with occasional collapse)./3,6/

The Downtown Plan EIR includes information on Seismic Safety issues in the C-3 District of downtown, including C-3 areas within one block of the project site on the north and south. That information remains current. The South of Market Plan EIR provides similar information for that area, as does the Mission Bay EIR for its project area. These EIRs do not provide any new data about seismic issues that establish a need for revisions in the Downtown Plan EIR information or conclusions.

In summary, the Downtown & Vicinity, like other parts of San Francisco and the Bay Area, is subject to ground shaking from potentially large earthquakes on the San Andreas and Hayward Faults, as well as on other faults in the region. Relatively more of the land in the Downtown & Vicinity is subject to violent ground shaking intensity than the rest of the City because the eastern edge of the area is built on filled land. Employment growth in the Downtown & Vicinity, such as that associated with the project, would result in larger numbers of persons being exposed to future earthquake hazards if a seismic event occurred during the work day. New buildings are subject to more stringent building and structural standards than are older buildings. Therefore, persons working in new buildings would be relatively safer than those in some older existing buildings. However, during an earthquake, glass, and in some cases building cladding, is expected to endanger those on the streets and sidewalks. The bridges leading to and from San Francisco are expected to be closed for over three days due to damaged access ramps. The same would be true of the freeways heading south to the Peninsula. MUNI and Caltrain would be out of service for some time, and power outages would occur for at least one or two days (see Downtown Plan EIR, pp. IV.K.1-17a; Mission Bay EIR, Vol. II, pp. VI.K.11-15 and 33-43; South of Market EIR, pp. 154-174).

A moderate earthquake with a Richter magnitude of 7.1 occurred in the Bay Area in October 1989. The epicenter of that earthquake, known as the Loma Prieta earthquake, was about 50 miles from the project site. A number of buildings collapsed or were jolted off their foundations, mostly near the epicenter area but also in other parts of the Bay Area, including San Francisco and Oakland. The single largest cause of deaths was due to the collapse of a two-tiered freeway structure, known as the Cypress Structure, in Oakland. The Cypress Structure has since been demolished. Liquefaction and ground settlement occurred in places farther from the epicenter (primarily, for example, in the Marina and South of Market districts in San Francisco and at the Oakland International Airport.

In San Francisco, the most serious damage occurred in the Marina District and in the South-of-Market District. Much of the heaviest damage in these areas was associated with liquefaction and settlement of weak saturated soils. Fires resulted from ruptured utility lines. The earthquake-damaged Embarcadero Freeway has been demolished. In general, damage was lighter in areas underlain by firmer soils, such as those at the project site. However, the Loma Prieta earthquake did cause structural and non-structural damage to several buildings in the Civic Center area. Two State office buildings - 350 McAllister Street, built in 1926, and 525 Golden Gate Avenue, constructed about 1960 - remain closed due to structural damage. They are undergoing repair and are scheduled to reopen in 1995 and 1993, respectively./7/ The existing Main Library was closed after the earthquake because book stacks on the building's north side were loosened. The building sustained no structural damage and reopened, although the stack area is closed to the public./8/ City Hall and the City Hall Annex (450 McAllister Street) sustained non-structural damage and remain open. East of the project site, the Main Post Office and Federal Courts Building at Seventh and Mission Streets (just outside the project study area) remains closed after sustaining structural damage.

The type of damage caused by the 1989 earthquake is typical of moderate-sized earthquakes. Damage that occurred at distances of up to 50 miles from the epicenter is evidence that the project area may be adversely affected by earthquakes occurring on any of the region's major faults. An earthquake of similar or larger magnitude could occur again on the San Andreas, Hayward, Calaveras or other Bay Area faults. The Mission Bay EIR analyzes seismic impacts for an 8.4 magnitude earthquake on the San Andreas Fault, a 6.9 magnitude earthquake on the Hayward Fault, a 7.3 magnitude

earthquake on the Calaveras Fault, and a 7.1 magnitude earthquake on the San Gregorio Fault and describes damage conditions that generally are greater than what were experienced during the Loma Prieta earthquake. Other active faults in the region could produce smaller earthquakes.

NOTES - Geology and Seismicity

/1/ San Francisco City Datum (SFD) established the City's zero point for surveying purposes at approximately 8.6 feet above mean sea level.

/2/ Geo-Resource Consultants, "Geotechnical Investigation, The San Francisco Main Library, San Francisco," California, December 20, 1990.

/3/ URS/John A. Blume and Associates, *San Francisco Seismic Safety Investigation*, 1974.

/4/ Bay Area Rapid Transit District, February 7, 1991, Logs of Borings, Civic Center Station, San Francisco, California, Log of Boring S-702-23 dated March 26, 1964.

/5/ William Turnbull Associates. *Asian Art Museum - Main Public Library Building: A Feasibility Study*, p. 49, April 1988.

/6/ URS/John A. Blume and Associates, *San Francisco Seismic Safety Investigation*, 1974. Ground shaking intensities in San Francisco that would result from a major earthquake were projected and classified on a five-point scale ranging from E (weak) through A (very violent).

/7/ Guthrie, Larry, Chief of Architecture and Engineering, State Architect's Office, telephone conversation, March 28, 1991. The 350 McAllister Street building was scheduled for seismic retrofitting prior to the Loma Prieta earthquake.

/8/ Smith, Matthew, Chief Engineer, San Francisco Public Library, telephone conversation, March 27, 1991.

H. HAZARDS

The project site has a history of primarily administrative uses for almost 120 years. It was the location of San Francisco City Hall from 1872 (start of construction) until the 1906 earthquake and fire; the San Francisco Main Library has been on the northern portion of the site since 1915. The project site was the location of San Francisco's first cemetery in the mid-19th century. Such activities do not typically involve substantial hazardous material use and do not suggest the potential of subsurface contamination of soil or groundwater. Review of relevant agency files did not reveal any known contamination on the project site.

Land can be affected by spills or contamination at adjacent properties, primarily through groundwater migration. In the project area, groundwater is found to be about 20 to 24 feet beneath the ground surface and is assumed to flow to the southeast toward the San Francisco Bay. The area surrounding the project site is largely commercial with no industrial users of hazardous materials. San Francisco Department of Public Health files were reviewed for permitted underground storage tank (UST) locations and other permitted users of hazardous materials. The records review revealed four USTs or recent UST closures on property adjacent to the project site: a 10,000 gallon diesel tank at the State Building, 350 McAllister Street; two 10,000-gallon diesel tanks at the City steam plant, Larkin and McAllister Streets; three 3,000-gallon gasoline tanks and one 500-gallon waste oil tank closed in 1986 at Civic Center Garage; and one 3,000-gallon diesel tank closed in place in 1990 at Hastings College of the Law. Each of the last two sites retains a permit for limited storage (55-gallon maximum) of hazardous materials for routine maintenance./1/

A number of regulatory agencies, including the Regional Water Quality Control Board, maintain records of reported tank leaks and areas of soil and groundwater contamination. No underground storage tank leaks or other reports of known contamination for sites surrounding the project site appeared on any of these lists./2,3,4/ Because historic site uses do not suggest that contaminated soil or groundwater exists on the project site, impacts related to contaminated soil or groundwater would be unlikely.

A common hazard in older buildings is electrical equipment such as transformers that contain polychlorinated biphenyls (PCBs), organic oils that formerly were used as electrical insulators. None of the project site buildings house transformers. However, due to the age of the buildings, it is likely that each of the buildings have fluorescent lighting fixtures with PCB-containing ballasts./5,6/ The federal Toxic Substances Control Act specifically mandates EPA to regulate PCBs, which cause various human health effects including cancer.

If PCB-containing electrical equipment were not handled properly during removal, workers (and possibly the public) could be exposed to PCBs. Leaving PCB-containing equipment in renovated structures can cause an increase in the potential for PCB exposure in case of an accident or fire. Because PCBs are wholly contained within

electrical devices, the risk of exposure is relatively small under normal conditions. Following proper legally required procedures for handling PCB-containing equipment during maintenance or replacement would assure that impacts are mitigated. Because PCBs are not used in modern construction, exposure to potential hazards from building materials would be reduced in the long-term as a result of development of the project.

See the Initial Study, pp. A.31-A.32, for a discussion of asbestos and asbestos removal in buildings on the project site.

NOTES - Hazardous Materials

/1/ San Francisco County, Department of Public Health, hazardous material files, October, 17, 1991.

/2/ Regional Water Quality Control Board, Fuel Leak List, January 7, 1991.

/3/ Regional Water Quality Control Board, North Bay Toxics List, January 9, 1991.

/4/ California Governors Office, Office of Planning and Research, Hazardous Wastes and Substances Sites List, March, 1990.

/5/ Walsh, Richard, Secretary to the Library Commission, San Francisco Main Library, telephone conversation, March 21, 1991.

/6/ Cone, John, Building Superintendent, San Francisco City Hall, telephone conversation, March 21, 1991.

I. GROWTH INDUCEMENT

With construction of the New Main Library, the project would further the physical completion of the San Francisco Civic Center in a manner similar to that envisioned in the 1912 Civic Center Plan. Marshall Square, site of the proposed new library, is the last remaining major underdeveloped parcel in the Civic Center. The New Main Library and the proposed Asian Art Museum both would be compatible with existing land uses in the Civic Center, including large-scale government and other civic facilities and services; they would not be expected to generate substantial further increase in such facilities and services, in part because there are no other relatively large developable parcels. Expansion of government and related services, including a proposed new City office building at 450 McAllister Street and a proposed development sponsored by Hastings College of the Law, is currently in the planning stages. The additional patrons drawn to the Civic Center by the New Main Library

and the Asian Art Museum could generate demand for additional small-scale retail and service establishments, such as restaurants, bookstores and gift shops; the project would include such uses.

Net new employment in the Civic Center as a result of the project (including both the New Main Library and the Asian Art Museum) would total about 135 jobs. Not all of these jobs would be new to San Francisco, even if the deYoung Museum were to expand into the former quarters of the Asian Art Museum and hire additional employees to replace the museum employees who would have moved to Civic Center. The extent that net new employment in the Civic Center would be net new employment in San Francisco would depend on the use of existing building space vacated as a result of the project, and whether the new uses of the vacated space resulted in the creation of new net employment in San Francisco. If the project were to represent net new employment in San Francisco, the project would indirectly generate about 115 additional jobs in the Bay Area through the multiplier effect.

The project consists of uses expanding and/or relocating from other San Francisco locations, rather than new development in San Francisco. The increase in employment at the project site would not, therefore, necessarily represent employment that is new to San Francisco. It is expected that some of the new employees generated by the project would live in San Francisco. Employment growth, however, would not be reflected directly in increased demand for housing and city services to residents, as some new jobs would be held by individuals who already live and work in the City; who live in the City but previously worked outside the City or did not work; or who live outside the City. Project employment would incrementally increase housing demand in San Francisco and other parts of the Bay Area.

The project would be built in a developed urban area, and no expansion of the municipal infrastructure not already under consideration would be required to accommodate new development and increased employment due to, or induced by, the project.

V. MITIGATION MEASURES PROPOSED TO MINIMIZE POTENTIAL ADVERSE IMPACTS OF THE PROJECT

In the course of project planning and design, measures have been identified that would reduce or eliminate potential environmental impacts of the proposed project. Some of these measures have been, or would be, voluntarily adopted by the project sponsors or project architects and contractors and thus are proposed; some are under consideration and some have been considered and rejected by the project sponsors. Implementation of some may be the responsibility of other agencies. Measures under consideration or rejected may be required by the City Planning Commission as conditions of project approval, if the project were to be approved. Each mitigation measure and its status is discussed below.

There are several items required by law that would serve to mitigate impacts; they are summarized here for informational purposes. These measures include: no use of mirrored glass on the building to reduce glare, as per City Planning Commission Resolution 9212; limitation of construction-related noise levels, pursuant to the San Francisco Noise Ordinance (Article 29 of the San Francisco Police Code, 1972); and observance of State and federal OSHA safety requirements related to handling and disposal of hazardous materials.

Measures which are not required by legislation but which would also serve to mitigate environmental impacts appear below. Mitigation measures preceded by an asterisk (*) are from the Initial Study (see Appendix A, p. A.34).

CULTURAL RESOURCES

MEASURES PROPOSED AS PART OF THE PROJECT

- The sponsors would retain the services of an archaeologist. The Environmental Review Office (ERO) in consultation with the President of the Landmarks Preservation Advisory Board (LPAB) and the archaeologist would determine whether the archaeologist should instruct all excavation and foundation crews on the project site of the potential for discovery of cultural and historic artifacts, and the procedures to be followed if such artifacts are uncovered.

Given the archival history of the project site, an historical archaeologist would be present during site excavation and would record observations in a permanent log. The ERO would also require cooperation of the project sponsors in assisting such further investigations on site as may be appropriate prior to or during project excavation, even if this results in a delay in excavation activities.

Should archaeological resources be found following commencement of excavation activities, the archaeologist would assess the significance of the find, and immediately report to the ERO and the President of the LPAB. Excavation or construction activities which might damage the discovered cultural resources would be suspended for a maximum of four weeks (cumulatively for all instances where the ERO has required a delay in excavation of construction) to permit inspection, recommendation and retrieval, if appropriate. Upon receiving the advice of the consultants and the LPAB, the ERO would recommend specific action to protect the resources, if necessary.

Following site clearance, an appropriate security program would be implemented to prevent looting. Any discovered cultural artifacts assessed as significant by the archaeologist upon concurrence by the ERO and the President of the LPAB would be placed in an appropriate repository as determined by the ERO. Copies of the reports prepared according to these mitigation measures would be sent to the California Archaeological Site Survey Office at Sonoma State University along with three copies to the ERO.

TRANSPORTATION

MEASURES PROPOSED AS PART OF THE PROJECT

- The project sponsors would, in consultation with the Municipal Railway, install eyebolts or make provisions for direct attachment of eyebolts for MUNI trolley wires on the proposed building wherever necessary or agree to waive the right to refuse the attachment of eyebolts to the proposed buildings if such attachment is done at City expense.

- Secure bicycle storage facilities which would, at a minimum, provide safe shelter would be provided for commuters and short-term visitors to the New Main Library. The New Main Library would include showers for employees to encourage bicycling and walking as commute alternatives for employees in the project.

- The ramp leading to the library and Brooks Hall loading areas would include warning devices (lighted signs and noise-emitting devices) to alert pedestrians to vehicles exiting the structure.

- Lighted and audible indicators would be installed inside the library loading area to alert other drivers and employees to the presence of vehicles using the loading ramp.

- Staff of the New Main Library and Brooks Hall would coordinate truck loading and unloading activity to minimize conflict between delivery vehicles serving the two uses. Specifically, the library would schedule deliveries that would be made by semi-trailer to occur on days when there would be no scheduled truck activity

at Brooks Hall. Brooks Hall staff would provide library staff with a schedule of loading and unloading activity as often as is required to keep library staff apprised of scheduled activity at the Brooks Hall loading area.

- In order to provide for pedestrian safety during the construction period for the New Main Library, the library's construction manager would ensure that pedestrian walkways were maintained at the ends of Fulton Street at Larkin and Hyde Streets during the construction period. Four-foot pedestrian walkways would be provided on Larkin and Grove Streets where construction would preempt sidewalk space. Similar measures would be employed by the Asian Art Museum's contractor, as determined to be necessary by the Traffic Engineering Division of the Department of Parking and Traffic, during remodeling of the existing library building and construction of the addition to that building.

- While subsurface sidewalk vaults are discouraged, if vaults are included in the project, the project sponsors would design subsurface sidewalk vaults to allow for possible future widening of adjacent streets. Vault design would be of sufficient strength to carry maximum vehicular live and dynamic loads. Design of the vault area to accommodate street trees would also be made, subject to Department of Public Works approval. In addition, should vaults exist or be installed as part of the project, the project sponsors would accommodate and pay for the installation of all subsurface footings, supports and foundations as may be required for future public improvements such as street lights, street trees, trolley wire poles, signs, benches, transit shelters, etc. within project vault areas. Placement of such improvements is entirely within the discretion of the City.

MEASURES UNDER CONSIDERATION BY THE PROJECT SPONSORS

- The Asian Art Museum could provide traffic control personnel on Hyde Street during truck movements to ensure the safety of pedestrians and to minimize transit and automobile traffic disruption. The Museum could install a lighted sign and/or a noise-emitting device at the entrance to its loading dock to alert pedestrians to vehicles exiting the loading area.

- The Asian Art Museum could include secure bicycle parking facilities for employees and visitors and could provide employee showers to encourage bicycle commuting.

- The placement of paving, landscaping or structures in the sidewalk area (subject to City approval) could be done in such a way as to minimize interference with pedestrian traffic.

- During the construction period, construction truck movement could be permitted only between 9:00 a.m. and 3:30 p.m. to minimize peak-hour traffic (including transit) conflicts. The project sponsors and construction contractor(s) could meet with the Traffic Engineering Division of the Department of Parking and Traffic, the Fire Department, MUNI and the Department of City Planning to determine feasible traffic mitigation measures to reduce traffic congestion during construction of this project and other nearby projects. To minimize cumulative traffic impacts due to lane closures during construction, the project sponsors could coordinate with construction contractors for any concurrent nearby projects that are planned for construction or become known.

MEASURES THAT COULD BE IMPLEMENTED BY OTHER AGENCIES

- The Department of Parking and Traffic could consider permitting the use of on-street parking spaces on the east side of Hyde Street between McAllister and Fulton Street as a 'holding area' for Brooks Hall trucks on days of loading/unloading activity at Brooks Hall.

- The New Main Library and the proposed Asian Art Museum addition could be designed to include a direct underground connection to the Civic Center BART / MUNI Metro Station, making transit use more attractive to patrons and employees. This would require public funding and implementation by various local and other agencies.

- Work schedules of Pacific Gas and Electric Company and other utilities requiring trenching could be coordinated, so that street disruption would take place during weekends and off-peak hours. This should be done through the San Francisco Committee for Utility Liaison on Construction and Other Projects (CULCOP). In-street utilities should be installed at the same time as the street is opened for construction of the project to minimize street disruption.

- Brooks Hall staff could arrange for incoming trucks, making deliveries or pickups, to go first to a staging area. Trucks would be dispatched from the staging area to Brooks Hall when adequate capacity were available within the Brooks Hall loading area to minimize interference with library loading activity or traffic on Hyde Street.

- Brooks Hall staff could provide traffic control in the form of personnel stationed at the Hyde Street end (mouth) of the loading ramp during truck movements to ensure the safety of pedestrians and to minimize transit and automobile traffic disruption due to trucks on days of loading/unloading activity at Brooks Hall.

- Brooks Hall and Civic Auditorium staff could encourage organizations scheduling events at those facilities to include information on public transit accessibility in their promotional and advertising information.

- The City could act upon or endorse the implementation of transportation mitigations described in the Mission Bay EIR Vol. II, Section VI.E, Mitigation, pp. VI.E.214-VI.E.217 for the year 2000 and VI.E.224-VI.E.231 for 2020, and in the South of Market EIR, pp. 189-194. The measures for the year 2000 include: construction and maintaining rail rapid transit lines from downtown San Francisco to suburban corridors and major non-downtown centers in San Francisco; increased funding for Vehicle Acquisition Plans for San Francisco and regional transit agencies to expand existing non-rail transit service; providing exclusive transit lanes on City streets and on freeways; reducing incentives to drive by discouraging long-term parking; encouraging carpools, vanpools, and bicycle use; improving pedestrian circulation within downtown San Francisco; and providing transportation brokerage services. The Mission Bay EIR describes various types of measures to illustrate the magnitude of improvements needed to mitigate the impacts of regional growth in 2020.

Some of the implementing actions would require approval by decision-makers outside the City and County of San Francisco; many of the measures would require action by City agencies other than the City Planning Commission, such as the San Francisco Public Utilities Commission and/or Board of Supervisors. All except such things as providing transportation brokers would require funding from or approval by MTC. These measures are system-wide measures that must be implemented by public agencies. Other than project-specific measures such as the relevant transportation mitigation measures described above as part of the project or such measures as the Transit Impact Development Fee assessment required by San Francisco ordinance 224-81 (not applicable to the project) which contribute indirectly to implementation of these system-wide measures, it is not appropriate to impose mitigation at system-wide levels on individual projects.

AIR QUALITY

MEASURES PROPOSED AS PART OF THE PROJECT

*• The project sponsors would require the contractor(s) to sprinkle demolition sites with water regularly during demolition, excavation and construction activities; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soils, sand and other material; cover trucks hauling debris, soils, sand or other such material; and sweep surrounding streets during demolition, excavation and construction at least once per day to reduce PM_{10} emissions. The project sponsors would require that the contractor(s) obtain reclaimed water from the Clean Water Program for this purpose. The project sponsors would require the project contractor(s) to maintain and operate construction equipment so as to minimize exhaust emissions of PM_{10} and other pollutants, by such means as a prohibition on idling of motors when equipment so not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

NOISE

MEASURES PROPOSED AS PART OF THE PROJECT

*• As recommended by the Environmental Protection Element of the San Francisco Master Plan, an analysis of noise reduction measures would be prepared by the project sponsors and recommended noise insulation features would be included as part of the proposed buildings. For example, such design features could include fixed windows and climate control.

• The project sponsors would consult with the Department of Public Works to determine the time when pile driving would cause the least disturbance to neighboring uses. The project sponsors would require that the construction contractor(s) limit pile driving activity to result in least disturbance to people. This could require a work permit from the Director of Public Works pursuant to San Francisco Noise Ordinance Section 2908, if pile driving during nighttime hours were determined to be less disruptive to neighboring uses.

- The project contractor(s) would be required by the project sponsors to use construction equipment with state-of-the-art noise shielding and muffling devices.

- The project sponsors would require that the project contractor(s) predrill holes (if feasible based on soils) for piles to the maximum feasible depth to minimize noise and vibration from pile driving. The actual pounding from pile driving would occur during a five- to eight-minute span per pile.

MEASURE CONSIDERED AND REJECTED BY THE PROJECT SPONSORS

- The project sponsors could require the general contractor(s) to construct barriers around the site and around stationary equipment such as compressors, which would reduce construction noise by as much as five dBA, and to locate stationary equipment in pit areas or excavated areas, as these areas would serve as noise barriers.

GEOLOGY / TOPOGRAPHY / HYDROLOGY

MEASURES PROPOSED AS PART OF THE PROJECT

- One or more geotechnical investigations by a California-licensed geotechnical engineer are included as part of the project. The project sponsors and contractor(s) would follow the recommendations of the final geotechnical report(s) regarding any excavation and construction for the project.

- If dewatering were necessary, groundwater pumped from the site would be retained in a holding tank to allow suspended particles to settle, if this were found necessary by the Industrial Waste Division of the Department of Public Works, to reduce the amount of sediment entering the storm drain/sewer lines.

- The project sponsors would require the general contractor(s) to install and maintain sediment traps in local stormwater intakes during the construction period to reduce the amount of sediment entering the storm drain / sewer lines, if this is found necessary by the Industrial Waste Division of the Department of Public Works.

- The project sponsors and contractor(s) would follow the geotechnical engineers' recommendations regarding installation of settlement markers around the perimeter of shoring to monitor any ground movements outside of the shoring itself. Shoring systems would be modified as necessary in the event that substantial movements were detected.

- Should dewatering be necessary, the final soils report would address the potential settlement and subsidence impacts of this dewatering. Based upon this discussion, the soils report would contain a determination as to whether or not a lateral and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets. If a monitoring survey is recommended, the Department of Public Works would require that a Special Inspector (as defined in Article 3 of the Building Code) be retained by the project sponsor to perform this monitoring. Groundwater observation wells would be installed to monitor the level of the water table and other instruments would be

used to monitor potential settlement and subsidence. If, in the judgment of the Special Inspector, unacceptable subsidence were to occur during construction, groundwater recharge could be used to halt this settlement. The project sponsor would delay construction if necessary. Cost for the survey and any necessary repairs to service under the street would be borne by the project sponsor.

- The project sponsors and contractor(s) would follow the geotechnical engineers' recommendations regarding dewatering to avoid settlement of adjacent streets, utilities and buildings that could potentially occur as a result of dewatering. The present proposed scheme for the New Main Library is to install or soldier piles and lagging around the New Main Library site and then install dewatering wells or sumps inside the wall to dewater only the inside area. Monitoring wells would be installed around the outside of the excavation to monitor the water level throughout the construction period. Recharge of groundwater could be performed if a substantial drop in water levels took place outside of the excavation.

- Preliminary investigation for the seismic upgrade of the existing Library building for the Asian Art Museum indicates that dewatering may not be necessary. A geotechnical report would be prepared and its recommendations followed.

WATER QUALITY

MEASURE PROPOSED AS PART OF THE PROJECT

- See the second and third measures under Geology / Topography / Hydrology, above, for mitigation proposed to prevent sediment from entering storm sewers.

HAZARDS

MEASURES PROPOSED AS PART OF THE PROJECT

*• In order to reduce potential injury to building occupants during an earthquake or other catastrophic emergency, evacuation and emergency response plans would be developed by the project sponsors or building management staffs, in consultation with the Mayor's Office or Emergency Services to ensure coordination between the City's emergency planning activities and the project's plans and to provide for building occupants in the event of an emergency. The project plans would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

*• To expedite implementation of the City's emergency response plan, the project sponsors would prominently post information for building occupants concerning what to do in the event of a disaster.

- Before demolition or renovation occurred, the project sponsor(s) would ensure that PCB-containing equipment is removed following all regulations for worker safety and disposed of as a regulated waste.

VI. SIGNIFICANT ENVIRONMENTAL EFFECTS THAT CANNOT BE AVOIDED IF THE PROPOSED PROJECT IS IMPLEMENTED

In accordance with Section 21067 of the California Environmental Quality Act (CEQA), and with Sections 15040, 15081 and 15082 of the State CEQA Guidelines, the purpose of this chapter is to identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the proposed project, or by other mitigation measures that could be implemented, as described in Chapter V. Mitigation Measures, pp. 179 to 185.

The findings of significant impacts are subject to final determination by the City Planning Commission as part of its certification process for the EIR. This chapter in the Final EIR will be revised, if necessary, to reflect the City Planning Commission's findings.

No significant project-specific impacts have been identified.

Cumulative development in the Greater Downtown and Vicinity in San Francisco (which includes the project site) would have a significant effect on the environment in that it would contribute to cumulative traffic increases as well as cumulative passenger loadings on MUNI, BART and other regional transit carriers. These cumulative transportation impacts could cause violations of fine particulate matter (PM_{10}) standards in San Francisco with concomitant health effects and reduced visibility. The proposed project would contribute to these cumulative effects.

VII. ALTERNATIVES TO THE PROPOSED PROJECT

This chapter identifies alternatives to the proposed project, discusses environmental impacts associated with each alternative, and gives the sponsors' reasons that the alternatives were rejected in favor of the project. Regardless of the reasons for rejection, the Library Commission, and later the Asian Art Commission and Department of Public Works could approve an alternative instead of the project if the decision makers believed the alternative would be more appropriate for the site(s).

A. ALTERNATIVE A: NO PROJECT

DESCRIPTION

This alternative would involve no change to the site. The 100 Larkin Street City office building, surface parking lot and Pioneer Monument would remain on Marshall Square, and the Main Library would remain at its existing location. The Asian Art Museum would not be moved from Golden Gate Park. Fulton Street would not be altered.

This alternative would preserve the option to develop the project site(s) in the future with a larger or smaller development.

IMPACTS

Under this alternative, none of the impacts associated with the project would occur. The environmental characteristics of this alternative would be generally as described in the Environmental Setting sections of this report (see Chapter III. Environmental Setting, pp. 47 to 80). Transportation, noise, and air quality impacts resulting from project construction would not occur. Future transportation and air quality conditions (as described in Chapter IV. Environmental Impacts, pp. 119 to 164) would reflect impacts of cumulative development, minus the project. There would be no change in energy demand or demand for other services/utilities on the site. Land uses, site views, shadow and winds would not change. There would be no change in population or employment on the project site. There would be no effects on architectural resources on the project site, and subsurface cultural resources would not be affected. Asbestos

and PCB removal from the site would not occur as it would with the project. Under this alternative, there would be seismic strengthening of the existing library building, similar to that under the project, but probably not of the existing 45 Hyde Street and 100 Larkin Street buildings, and therefore the corresponding seismic risks with the 45 Hyde Street and 100 Larkin Street buildings would remain as at present. There would be no effects on landscaping on the site. This alternative would not contribute to cumulative impacts on transportation or air quality. This alternative would not potentially create new jobs in the Civic Center area and in San Francisco.

B. ALTERNATIVE B: PIONEER MONUMENT

This alternative includes three sub-alternatives. The first is retention of the Pioneer Monument in place and redesign of the proposed New Main Library to accommodate the monument. The second sub-alternative discusses the impacts of relocating the Pioneer Monument and the five locations currently under consideration by the Arts Commission as part of the project. The third sub-alternative discusses potential temporary storage of the monument pending relocation site selection and development. The EIR describes the monument primarily in Chapter III.B, pp. 52 - 68.

B.1: Pioneer Monument, Retain in Place

DESCRIPTION

This alternative would retain the Pioneer Monument at its present location on Marshall Square. Under this alternative, a new Main Library would be built on Marshall Square; it would be similar to the project library but with the Hyde Street / Grove Street corner redesigned. This alternative would include remodeling and expansion of the existing library building to contain the Asian Art Museum. It would also include construction of the Fulton Street Mall.

Under this alternative, square footage of the New Main Library would be approximately 379,700 sq. ft., about 17,300 sq. ft. less than under the proposed project, according to the project architect./1/ In order to accommodate the monument, the southeast corner of the building (Hyde and Grove Streets) would be modified. No

auditorium would be constructed in the basement; instead, additional storage space would take the place of the auditorium (less total building space would be provided in the basement with this alternative). Meeting rooms with a capacity of up to 250 persons would remain a feature of the basement level.

Based on the current design for the New Main Library, retention of the monument would eliminate, in addition to the auditorium, the outdoor children's terrace on the Upper Main floor, and reduce the space allotted to the Media Studio, the Children's Program Room, the Scholar Center, and closed book stacks./2/ It would reduce staff work space in the following departments: Children's Services, Newcomers' Help, Art and Music, the Government Information Center, and the San Francisco History Center./2/ Should the New Main Library be redesigned within the same footprint as the proposed project library, most, if not all, of these activities could be accommodated elsewhere in the building with a consequent reduction in space for other departments and/or programs. Alternatively, the building could be expanded into the Larkin Street and/or Fulton Street setbacks to accommodate these activities and programs.

IMPACTS

Impacts of this alternative would be similar to those of the project. Daily trip generation would be the same because the library would offer essentially the same services. Without the auditorium, there could be some change in peaking characteristics of patron trips, particularly in the evening when there would be fewer trips; this change would not measurably affect levels of service at study intersections in the p.m. peak hour.

Construction and renovation-related noise and air quality impacts would be nearly identical to those of the project. Impacts related to the density of development would be similar to those of the proposed project, since development on the project site would be nearly identical to that under the project. Because the building footprint and exterior of the New Main Library would be similar to that under the proposed project, effects related to subsurface cultural resources and biology would be similar to those of the project. Employment would be identical to that under the proposed project, as would the corresponding exposure to seismic hazards.

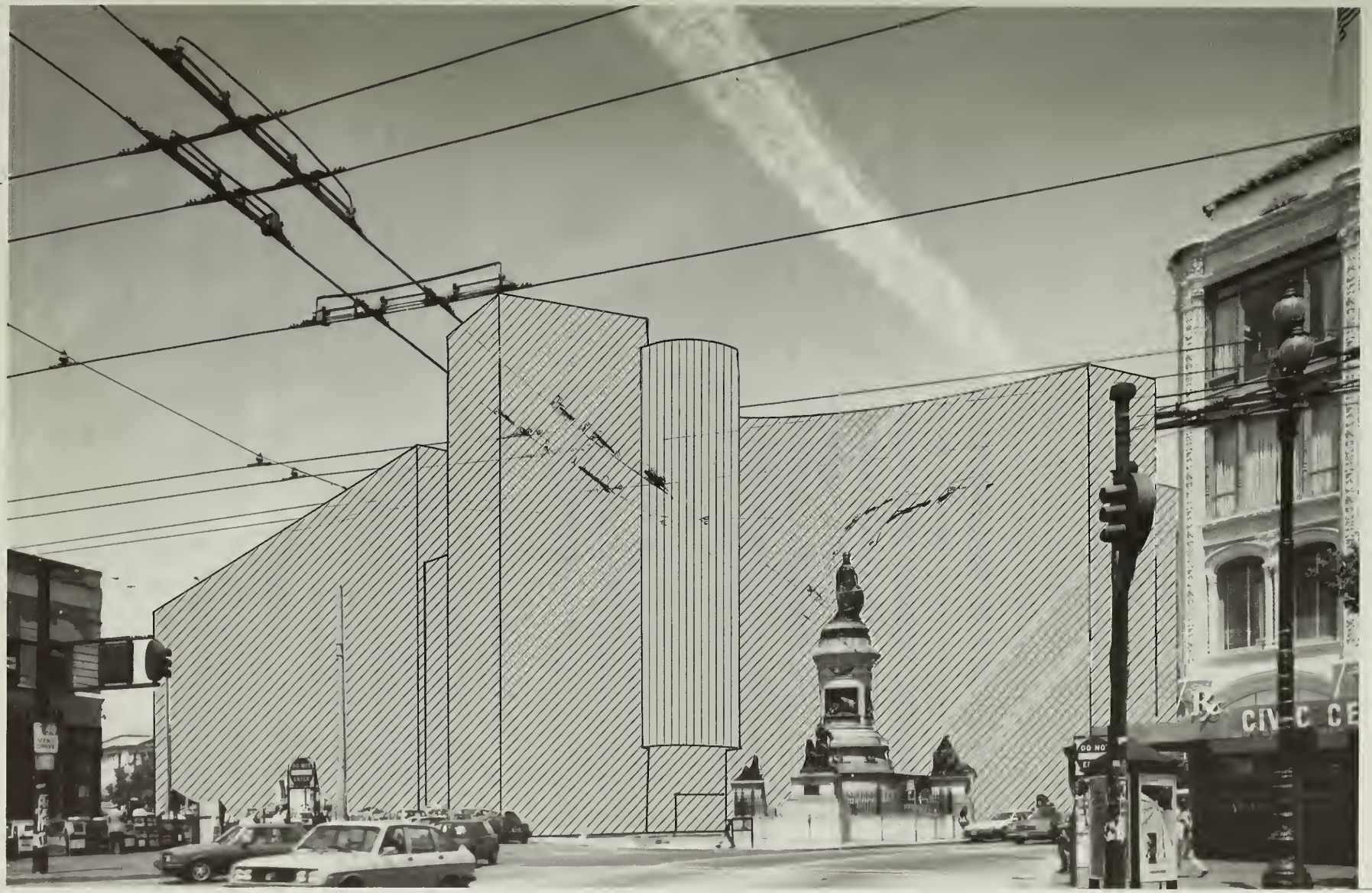
Energy use, demand for public services, and cumulative effects related to transportation and air quality would be similar to those of the project. Shadow and wind effects would be similar to those under the project. Effects on views would be the same, except at the corner of Eighth and Market Streets where the Pioneer Monument would stand in the foreground of the New Main Library. Effects on architectural resources would be similar to those under the project, with the exception that the monument would remain in its original 1894 location. This alternative would avoid any potential effects of moving the monument. However, the monument would be subject to potential construction-related effects. As the only remaining structure on the New Library block, the monument could require shoring and a temporary protective structure during construction.

The San Francisco Tomorrow organization advocates retention of the monument in place (see Figure 36). San Francisco Tomorrow has developed an alternative that would maintain the same floor area as the project, by two design changes. One change would be to fill in the notch, or space, shown at the northeast corner in the project design. (The notch corresponds to a notch at the existing library, formed where the east wall of the library and the 45 Hyde Street building meet.) Second, the New Main library, in the San Francisco Tomorrow alternative, would extend six feet, eight inches further north than the project (along Fulton Street in the setback area). This extension would represent about four percent of the building width. There would be an outdoor play area in a loggia outside the Children's Library and a southeast-oriented plaza around the monument.

This alternative would include the same library activities as the project. Some replanning would be necessary to accommodate the library's program within a different building floor plate.

REASONS FOR REJECTION

The project sponsor considered this alternative in developing the project. The project sponsor has rejected this alternative in favor of the current proposal because it would not allow the construction of an auditorium in the proposed new Main Library. Because the library use is different from an office building in which partitions are movable in plan, the project sponsor believes the library program as currently designed could not be retained, if the same floor area were provided in a different



SF Main Library ■

SOURCE: Environmental Science Associates, Inc. and San Francisco Tomorrow

Note: These photos were taken with a wide angle lens in order to include important features that define the physical context of the project. Such wide angle views exaggerate perspective and distort straight lines when reproduced on a relatively narrow, flat surface.

Figure 36
Alternative B.1
Pioneer Monument, San Francisco Tomorrow Alternative

configuration. In the sponsor's view, this alternative would entail the loss of some program space, including the proposed children's outdoor terrace. In addition, retention of the Pioneer Monument in its present location in the sponsor's view would result in the monument being "crowded" by the new library and would remove any visual link between the monument and City Hall.

B.2: Pioneer Monument, Relocate within Civic Center

DESCRIPTION

The project includes relocation of the Pioneer Monument. This alternative describes the five locations currently under consideration by the Arts Commission for relocation of the Pioneer Monument./3/ The project includes relocation of the monument. The Arts Commission has jurisdiction over publicly installed art and must approve a decision to relocate the monument, as well as the relocation site. The Federal Section 106 process could be triggered if federal funds were to be used for the cost of relocation of the monument (see Chapter III.B., pp. 57 - 58 for a description of the Section 106 process.)

A preliminary feasibility study has considered relocation of the monument./4/ The study addresses conditions including underground structures at each potential relocation site and the composition of and means of disassembling and reassembling the monument.

According to the preliminary feasibility study the central column and four piers, all of which are topped by metal statues, are composed of pieces of granite each weighing between two and 20 tons. The entire monument is estimated to weigh about 560 tons, excluding the concrete foundation.

Relocation to each of the five potential sites, given the weight of the monument, would require dismantling. Each of the five statues that stand atop granite columns, including the central figure of California, as well as some other metal pieces, would have to be removed. The central column and each of the four smaller granite piers would be marked, disassembled, moved and then reassembled at the new site. The Library Foundation, a private fundraising organization that is raising money for interior furnishings for the New Main Library, would be primarily responsible for the cost of relocation, including structural underpinning required to support the monument. The foundation has set aside $750,000 for moving the monument./5/

Other than effects on the monument itself and associated changes in the library development program, building envelope and views of the monument described in Alternative B-1 above, impacts of this alternative would be the same as for the project plus site-specific impacts at each location. Figure 37 illustrates the potential relocation sites under consideration by the Arts Commission; locations on the figure are approximate, and orientation of the monument is for illustration only.

The Pioneer Monument was erected in 1894. It remains at its original location, although the surroundings including the street grid have changed and the ground around the monument has been regraded, so that the monument is now higher above the ground (see Figures 14 and 15, pp. 63 and 65, for photos of the monument).

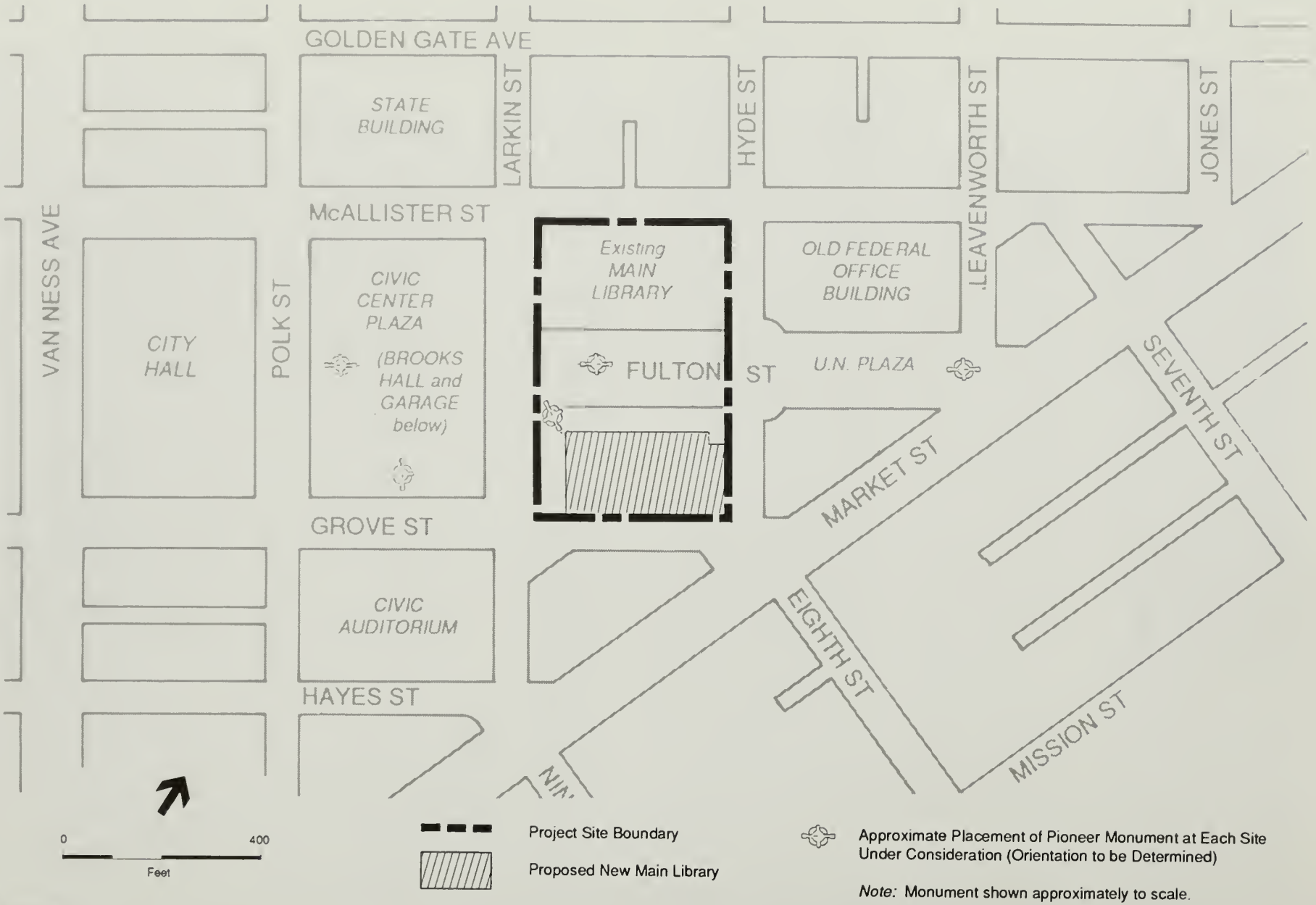
Descriptions of the relocation alternative sites, based on the preliminary study, provide general information on the feasibility of each location and rough cost estimates which range from about $500,000 (Fulton Street, midblock between the museum and library) to an assumed multi-million dollar figure (U.N. Plaza, above BART, MUNI).; additional engineering and consulting fees could add $100,000 to $250,000 to the cost of relocating the monument to each site. This information, especially cost estimates, could change with further examination.

Relocation of the monument would be expected to take two to four months, plus six to eight months for advance engineering design.

a) Fulton Street Mall

The Pioneer Monument would be on axis with an imaginary line drawn through the center of City Hall, establishing at a distance a relationship between the monument and City Hall; originally, the monument stood directly in front of old City Hall (see Figure 15, p. 65). If located to the center of the mall between Larkin and Hyde Streets, the monument would be about 800 feet from City Hall.

The feasibility study considered two Fulton Mall locations: midblock between the entrances of the existing and proposed libraries, and the center of Fulton Street at Larkin Street. Relocation of the Pioneer Monument to the proposed Fulton Street Mall would have to follow construction of the New Main Library loading area. The monument would have to be stored temporarily (see discussion, p. 197).



SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure 37
Alternative B.2
Pioneer Monument Relocation Sites in Civic Center

Based on the preliminary feasibility study, if the Pioneer Monument were relocated to the center of the Fulton Street Mall, a concrete mat foundation probably could be used; there is a possibility that the library / Brooks Hall loading ramp or the wall(s) of the loading area(s) serving one or both facilities would need strengthening. Some relocation of utilities could be required. If the Civic Center Garage were expanded beneath the proposed mall, structural underpinning would be required to support the weight of the monument. Subsurface support requirements and utility relocation would add to the cost of relocation. The feasibility study did not assume expansion of Civic Center Garage beneath Fulton Street.

b) United Nations Plaza

Relocation of the Pioneer Monument to the Market Street end of United Nations Plaza would place the monument on axis with City Hall, at a greater distance (about 1,500 feet from City Hall) than the Fulton Street Mall.

Relocation of the Pioneer Monument to United Nations Plaza would require approval from BART and MUNI because the site is above their underground Civic Center Station, and possibly the approval of other agencies. Structural underpinning in the subway station would be necessary to support the monument at this location. Potential disruption to transit service would have to be considered in relation to underpinning. The degree of support and strengthening of the station would probably make the cost of this alternative prohibitive./4/

c) Civic Center Plaza

At this location near the southern edge of Civic Center Plaza, across Grove Street from the Civic Auditorium, the monument would be off axis with City Hall but would be on cross-axis with proposed fountains in the redesigned United Nations Plaza (see Figure 37, p. 194). The monument would be about 275 feet from City Hall and about 400 feet from the City Hall entrance on Polk Street.

Relocation of the Pioneer Monument to the south side of Civic Center Plaza could occur prior to completion of the library building program. This location would be above Brooks Hall and would require strengthening the roof and supporting columns and floors of Brooks Hall to support the monument. There could be some disruption of activity at Brooks Hall.

d) Corner of Larkin and Fulton Streets

This location would be diagonally across the New Library block from the current location of the Pioneer Monument, and about 600 feet from City Hall. At this location, the monument would not be on axis with City Hall. This location would be at least partially within the setback on the Larkin and Fulton Street sides of the New Main Library but would not affect the footprint of the new library building.

Relocation of the Pioneer Monument to the Larkin and Fulton Streets corner could not feasibly be accomplished until after construction of the New Main Library basement level / loading area. The monument would probably be placed in storage until the site were ready (see discussion, p. 197). At this location, the monument would be directly above the loading area of the new library. As a result, additional strengthening beyond that included in the current library design would have to be incorporated into construction of the building.

The monument would have to be set at an angle to accommodate its size at this location.

e) In Front of City Hall

The Pioneer Monument would be on axis with City Hall, between about 150 to 450 feet to the east within Civic Center Plaza, and on axis with existing sculpture in the United Nations Plaza. The monument could be placed anywhere within the area now occupied by the reflecting pools.

The monument could not be relocated until reconstruction of Civic Center Plaza had begun and would probably be placed in storage at least until removal of the existing reflecting ponds (see discussion, p. 197). Relocation of the monument to Civic Center Plaza would require structural underpinning and strengthening in the subsurface Civic Center Garage for all three subsurface levels to support the weight of the monument. Some parking spaces could be lost.

B.3 Pioneer Monument, Temporary Storage

DESCRIPTION

This alternative would entail removal of the Pioneer Monument from its current location, and storage of the monument in a secured, enclosed City-owned facility pending site selection and development. Relocation of the monument to a temporary storage location would require that it be dismantled (see discussion of monument dismantling procedures under Alternative B.2, pp. 192 - 196). The Library Foundation, a private fund raising foundation that is raising money for interior furnishings for the new Main Library, would pay the costs of monument relocation and storage. The Federal Section 106 process could be involved in the monument relocation if federal funds were included in the cost of the relocation (See Chapter III.B; pp. 57 - 58 regarding the Section 106 process).

Storage of the monument would occur prior to the start of construction at the new Main Library site. Unless the monument were relocated to the Fulton Street Mall, shoring of the site for the new monument would likely be required to provide adequate support beneath the new monument site; under this alternative, all required technical evaluation and preparatory work for the new site could be conducted while the monument was in storage. This alternative would not require any protective structure to be placed around the monument during construction activities of the project; however, relocation of the monument twice, required under this alternative, would subsequently increase the possibility of damage to the monument incurred during its movement.

If storage of monument were long-term, for example 25 years, it could be considered to have historic, Architectural, and Cultural impacts related to removing an historic sculpture from public view.

C. ALTERNATIVE C: ALTERNATIVE SITE

DESCRIPTION

Under this alternative, a New Main Library would be constructed at an alternative site; the potential sites analyzed are in the Yerba Buena Center Redevelopment Area, south of Market Street. Marshall Square would remain in its existing condition, with the

100 Larkin Street City office building, surface parking lot, and Pioneer Monument remaining in their current locations. The Asian Art Museum would be relocated to the existing Main Library building, as with the project. The Fulton Street Mall might or might not be constructed under this alternative, as with the project.

Under this alternative, the New Main Library would be constructed on one of three likely sites on Central Block 2 in Yerba Buena Center, the block bounded by Mission, Howard, Third and Fourth Streets, or on East Block 2, the block bounded by Mission, Howard, and Third Streets and a line about mid-block between Third and New Montgomery Streets. On Central Block 2, the library could be built on the west (Fourth Street) side of the block, occupying space currently planned for a retail building and parking, or along Mission Street, in space currently planned as open space, which could be reduced and reconfigured. On East Block 2, the library could be built either north or south of the parcel on Third Street planned for the relocated Museum of Modern Art; the lots north and south of this site are currently planned for office space. The Yerba Buena Center is under the jurisdiction of the San Francisco Redevelopment Agency and this alternative would require agency approval.

A library would be consistent with the proposed culturally oriented uses of this portion of the redevelopment project. As noted, the alternative sites are near the proposed new location of the Museum of Modern Art, for which a design has been tentatively approved and construction is scheduled to begin 1992./6/

Under this alternative, the New Main Library would be approximately the same size as the library component of the proposed project, although it would likely differ in layout and exterior design, and could be integrated with one or more currently planned structures. Library uses would be the same as those proposed in the project and would total about 400,000 sq. ft., as in the proposed project.

Under this alternative, the Asian Art Museum would be relocated to the existing library building, as under the proposed project. Following construction of the New Main Library at Yerba Buena Center and relocation of all library services, the Asian Art Commission would undertake remodeling of the existing library building, including seismic upgrading of the existing building, demolition of the 45 Hyde Street building and construction of an addition to the existing library building, as under the project.

The Fulton Street Mall might be constructed under this alternative. Without the new library, the overall Civic Center plan, of which the mall is a part, would be reduced in scope. Were the mall not constructed, Fulton Street would remain a public street with about 90 on-street parking spaces.

This alternative would preserve the option to develop a similar or different development program on Marshall Square in the future.

IMPACTS

This alternative would shift some localized impacts related to the project, including transportation, air quality, noise, and population, from Civic Center to Yerba Buena Center. Although the intensity of project-related development in the Downtown & Vicinity would be similar under this alternative to that under the project, some of the impacts would occur at the Civic Center and some, at the alternative site. Cumulative transportation and air quality impacts, and energy use, would be the same measured against overall development in the Downtown & Vicinity analyzed in the Mission Bay Final EIR.

Civic Center

Under this alternative, land use at the proposed project site would not be as intense as under the project since only the Asian Art Museum, and not the New Main Library, would be built there. Effects related to transportation, construction air quality, construction noise, localized operational air quality, and population at the site would be less than under the project for the same reason. The construction period would be shorter, resulting in fewer construction-related air quality and noise impacts.

Total trip generation under this alternative would be similar to that under the project; however, only Asian Art Museum trips would begin or end in the Civic Center. Daily trip generation resulting from the Asian Art Museum would be about 8,250 pte, 40 percent fewer than under the project with the library. Approximately 680 pte would occur in the p.m. peak hour, 60 percent fewer than under the project. Because the Main Library would be moved from the Civic Center, and because of the different trip generation characteristics of museums and libraries, net new daily trip-ends in the Civic Center would number about 1,525, about 90 percent less than for the project as a

whole, while p.m. peak hour trips would decrease from current conditions by about 460 pte, or about 40 percent fewer than existing p.m. peak hour trips. All trips associated with the New Main Library would occur at Yerba Buena Center (see discussion below for Alternative Site).

Visual impacts would differ from those under the project because the New Main Library would not be built on the proposed project site. Regarding architectural and historic resources, the existing library building would be remodeled and expanded to contain the Asian Art Museum. The Pioneer Monument would not be affected by this alternative, compared to its relocation with the project. The potential to disturb subsurface cultural resources would be less than with the project since there would be no construction on the New Library block (Marshall Square); excavation would be required for the Asian Art Museum addition.

This alternative would add no new shadow to Civic Center Plaza, United Nations Plaza or the proposed Fulton Street Mall compared to the project, although the proposed museum addition at 45 Hyde Street would add shadow to the private plaza in front of Hastings College of the Law, as under the project. Wind speeds in the project area would be similar to present conditions. Impacts related to seismicity would be less than those of the project because fewer people would be on the proposed project site during the day; however, this alternative would result in the retention of the 100 Larkin Street building, which was constructed prior to the enactment of current earthquake codes. Impacts related to hazards would be similar to those under the project for renovation and expansion of the existing library building and demolition of 45 Hyde Street. This alternative would not remove landscaping from Marshall Square, which would occur under the project. However, with the project the Fulton Street Mall would probably be built, increasing open space at the Civic Center.

Alternative Site

The intensity of land use at the alternative site would be greater than at present and could be greater than that proposed under the Yerba Buena Center (YBC) development program if the library were to be constructed in addition to planned uses at YBC. The nature of land use would be different from present conditions and similar to that proposed under the YBC program.

Trip generation for the New Main Library at Yerba Buena Center would be similar to that for the new library at Civic Center under the project: about 12,300 daily and about 2,170 p.m. peak hour trips. All of these would net new trips at the alternative site, whereas only 5,575 daily and 1,030 p.m. peak-hour trips would be new trips at Civic Center under the project, because the existing library is located there.

Transportation analysis conducted to date for the most current development program of Yerba Buena Center is based on residents and jobs within the YBC Redevelopment Area as a whole, and not on specific land uses. As a result, a direct comparison of travel demand between the New Main Library and the land use(s) it would replace in the YBC program (retail / parking, open space, or office use) is not possible. In the p.m. peak hour in 2000, the Main Library at the YBC site would generate approximately 25 percent of the total trips that would be generated by the Yerba Buena Center program.

Transportation impacts of the library at one of the alternative sites likely would be greater than would otherwise occur at YBC, depending on which currently planned use the library would replace. If the library were to be constructed instead of open space, the change from the present YBC development program would be an addition of about 2,170 p.m. peak-hour trips. If the library were to replace a comparable amount of office space, the library would generate about four-and-a-half times the p.m. peak-hour trips (2,170 vs. 475). If the library were to replace a retail building one-fourth the size (about 100,000 sq. ft.), the library would generate more than three-and-half times more p.m. peak-hour trips (2,170 vs. 595).

Effects related to the intensity of development, including transportation, air quality, noise, visual impacts and population, would be similar to those of construction of a New Main Library at Marshall Square, but would occur at one of the alternative sites instead. The construction period would be shorter than for the project as a whole, although likely could be somewhat longer than the 30 months anticipated for the library, depending on whether the library were integrated with construction of another component of the YBC program. Therefore, construction-related air quality and noise impacts could be somewhat greater than for the library alone at Marshall Square. Construction impacts would be comparable to those for the currently planned development for the YBC, although addition of the New Main Library to the YBC

program could require additional engineering and construction work, such as more extensive foundations. Additional soils study of the alternative site could be required if so determined by the Bureau of Building Inspection, which would review building plans. The alternative sites are not in a Special Geologic Study Area, as defined in the San Francisco Master Plan.

If the library were constructed as part of a currently planned structure, effects on views, shadow and wind, subsurface cultural resources, and biology, and potential effects from hazardous materials would be similar in overall impact to those anticipated from planned development on Central Block 2 or East Block 2. If the library were built in addition to an existing structure (for example, in planned open space), effects on views, shadow and wind would be greater than anticipated from planned development, while if the library were built instead of a larger currently planned building (for example, an office tower), these effects would be less than anticipated from planned development. Regardless of the precise location within YBC, some impacts would be qualitatively different from those that would occur with development of the New Main Library in Civic Center. Among these would be different wind conditions and shadow (due in part to the different orientation of the street grid in the South of Market area); potential for discovering different subsurface cultural resources (because the alternative sites are not above an old cemetery but is in an area where prehistoric resources have been found and, on Central Bloc, 2, have already been removed and analyzed); and possibly less potential for hazardous waste on-site because sites on Central Block 2 include the subsurface expansion of Moscone Center, currently being completed, which has already fully excavated soils on that block.

D. ALTERNATIVE D: EXPANSION AND REUSE OF EXISTING LIBRARY

DESCRIPTION

Under this alternative, the existing library building would be remodeled and expanded to accommodate the space needs of the Main Library. Marshall Square would remain in its existing condition, with the 100 Larkin Street City office building, surface parking lot, and Pioneer Monument remaining in their current locations. The Asian Art Museum would not be relocated from Golden Gate Park. The Fulton Street Mall might or might not be constructed under this alternative, although without the new

library, the overall Civic Center plan of which the mall is a part would be reduced in scope. Were the mall not constructed, Fulton Street would remain a public street with about 90 on-street parking spaces.

Under this alternative, the existing library building would be remodeled and expanded into the 45 Hyde Street site to contain a total of 348,000 sq. ft. of space. (The expansion component is assumed to be built no higher than the existing approximately 80-foot library building.) Remodeling of the existing library building, including demolition of the 45 Hyde Street building, seismic upgrading of the existing library building, and construction of an addition on the 45 Hyde Street site, would be similar to that proposed under the project for the conversion of the existing building to the Asian Art Museum. The net new space gained would be more than the space planned for the Asian Art Museum because: a) the proposed museum addition at 45 Hyde Street is planned for only two stories under the project, as opposed to four stories under this alternative; b) this alternative would enclose portions of the existing building's courtyards and roof and would create a new floor around the upper volume of the main stair and extend this floor partially into the second floor reading rooms; and c) the expanded library building would include a basement level that would extend to the sidewalk line on three sides of the building and to the curb line on Fulton Street./7/

This alternative would preserve the option to develop a similar or different development program on Marshall Square in the future.

IMPACTS

Effects related to the intensity of development, including transportation, air quality, noise, and population, would be less substantial than under the proposed project because, while the Main Library would be remodeled and expanded as its present location, no construction would occur on Marshall Square. The construction period would be shorter, resulting in fewer construction-related air quality and noise impacts. Energy use and cumulative transportation and air quality impacts would be less than those of the project because the proposed New Main Library would not be constructed and the existing library building would not be occupied by a new use such as the Asian Art Museum, as would be the case under the project.

Trip generation under this alternative would be that associated with the expanded Main Library only. For a conservative analysis, it was assumed that daily trips by patrons would increase by 50 percent under this alternative, about half of the projected increase in library trips under the project; employee trips would increase as under the project. There would be about 2,725 net new daily pte, 80 percent less than under the project, and about 500 net new p.m. peak hour pte, about 53 percent fewer than under the project. Total daily trips would be about 9,450, about 30 percent fewer than under the project, while p.m. peak trips would be about 1,640, about 4 percent fewer than under the project. Traffic and air quality effects on Civic Center intersections would be potentially less than under the project.

Visual impacts would differ from those under the project because a new library building would not be constructed on Marshall Square. Impacts on architectural and historic resources would be different than under the project. The existing library building would be remodeled and expanded to accommodate the needs of the Main Library, but exterior changes, including removal of the inscription and large figures over the Larkin Street entrance, would not occur. Some public spaces in the library building, including the ground floor entry area, the main staircase, and the hall at the top of the stairs, would be retained. However, portions of the high-ceiling reading rooms on the second floor would be filled by a new mezzanine level./7/ The Pioneer Monument would not be affected by this alternative, nor would the 100 Larkin Street City office building. The potential to disturb subsurface cultural resources would be less than under the project since there would be no construction on the New Library block (Marshall Square), although there would be excavation at the existing library site.

This alternative would add no new shadow to Civic Center Plaza, United Nations Plaza or the proposed Fulton Street Mall, although the proposed museum addition at 45 Hyde Street would add shadow to the private plaza in front of Hastings College of the Law, as under the project. Wind speeds in the project area would be similar to present conditions. Impacts related to seismicity would be essentially the same as those of the project because the existing library building would be seismically upgraded, in a similar manner as with the project, and the 45 Hyde Street addition would be built to present code. However, fewer people would be on the proposed project site during the day, and this alternative would result in the retention of the

100 Larkin Street building which was constructed prior to the enactment of current earthquake codes. Impacts related to hazards would be similar to those under the project for renovation and expansion of the existing library building and demolition of 45 Hyde Street. This alternative would not result in the removal of landscaping from Marshall Square.

REASONS FOR REJECTION

The project sponsor considered this alternative in developing the project, and rejected it in favor of the current proposal. The sponsor rejected this alternative because it would require closing the Main Library during construction. A minimum level of services could be provided during the expansion work, either at an off-site location or in the 45 Hyde Street addition, which could be constructed before remodeling of the main building were to begin, and which would result in disruption of library services. In addition, even if the existing library were to be enlarged, the remodeled facility would be at capacity by the year 2006, with no provision for future expansion./8/

E. ALTERNATIVE E: EXISTING LIBRARY AS COURTS FACILITY

DESCRIPTION

Under this alternative, the New Main Library would be constructed as proposed, and the Pioneer Monument would be relocated as with the project. The existing Main Library building would be remodeled and converted to a courts building. The Asian Art Museum would not be relocated from Golden Gate Park. The Fulton Street Mall would be constructed between the New Main Library and the newly remodeled courts building.

This alternative would relocate the Civil Division of the Superior Court to the existing library building. (The Superior Court-Civil Division is currently located at City Hall, along with the Civil Division of the Municipal Court and other related facilities. Criminal Courts are at the Hall of Justice.) Remodeling of the building would be necessary to install 23 courtrooms and accompanying chambers, along with the law library, County Clerk's office, and other court-related uses. The 45 Hyde Street building would be demolished and an addition to the existing building constructed. (The expansion component is assumed to be built no higher than the existing

approximately 80-foot library building.) Total square footage for the courts building under this alternative would be approximately 310,000 sq. ft./9/

IMPACTS

Effects related to shadow and wind, subsurface cultural resources, hazards, biology, and seismicity would be similar to those of the proposed project because the intensity of development would be similar to that under the project. The length of construction would be similar, resulting in similar construction-related air quality and noise impacts. Cumulative transportation and air quality impacts would be similar to those of the project. Energy use would be similar to, although somewhat less than, that for the project. This alternative would not have the special conditioning requirements of a museum but would include installation of central air conditioning, which the existing library building lacks.

Assuming that vacated courtroom and associated space at City Hall would be backfilled by City offices, this alternative would generate approximately 43 percent more daily person-trip-ends (pte) than would the project./10/ Trip generation in the p.m. peak hour would be about ten percent greater than under the project. Air quality impacts would be correspondingly greater. Parking demand would also increase. Effects on architectural resources and visual impacts would depend on the nature of the remodeling of the existing library building.

Visual impacts would be similar to those under the proposed project because the New Main Library would be constructed on Marshall Square and the existing library building would be remodeled and expanded into the 45 Hyde Street space, as under the project. Impacts on architectural and historic resources would be similar as well. Removal of the library inscription and the large figures over the Larkin Street entrance and the literary names around the building would likely occur. Important public spaces in the library building, including the ground floor entry area, the main staircase, the hall at the top of the stairs, and the high-ceiling reading rooms on the second floor, would be retained and reused in the courts building. The Pioneer Monument would be relocated as under the proposed project. The potential to disturb subsurface cultural resources would be virtually the same as under the project, since the construction areas would be the same.

This alternative would add new shadow to Civic Center Plaza, the proposed Fulton Street Mall, United Nations Plaza, and the Hastings plaza in the same amount as the proposed project. Wind speeds in the project area would be similar to those under the project. Employment would be similar to that under the proposed project, as would the corresponding exposure to seismic hazards. Impacts related to hazards would be similar to those under the project. Impacts on existing landscaping would be similar to those under the project.

Cumulative effects related to transportation and air qualitycould be greater than those of the project due to impacts of new activities occupying existing space vacated by the courts, should this occur.

F. ALTERNATIVE F: PROJECT WITH CIVIC CENTER GARAGE EXPANSION

DESCRIPTION

Under this alternative, as with the project, a new Main Library would be constructed on Marshall Square as proposed. The Asian Art Museum would be relocated to the existing Main Library building. The Fulton Street Mall would be constructed. In addition, the existing Civic Center Garage beneath Civic Center Plaza would be expanded by about 570 spaces to a total of about 1,410 spaces.

All aspects of the New Main Library and Asian Art Museum construction would remain the same under this alternative. The garage expansion would consist of the addition of about 570 parking stalls in three levels beneath Fulton Street, between Larkin and Hyde. Access would be via the existing Civic Center Garage. This component of the project would be completed prior to construction of the Fulton Street Mall, which would then be built atop the garage addition.

IMPACTS

With the exception of parking and construction impacts, effects of this alternative would be virtually identical to those of the proposed project. This alternative would result in a lengthened construction timetable. Construction of the garage expansion would take 18 to 24 months, meaning that the total construction time would be 7 to 7½ years. The three project components -- construction of a new Main Library on Marshall Square, remodeling and expansion of the existing library building to accommodate the Asian Art Museum, and construction of the Fulton Street Mall -- all

would be undertaken. The construction of the Fulton Street Mall would be postponed until completion of the expansion of the Civic Center Garage, resulting in construction noise and air quality impacts that would be greater than those of the proposed project.

Further soils analysis would be conducted prior to construction of the proposed garage expansion. A geotechnical report would be prepared by a California-licensed geotechnical engineer prior to construction. The recommendations of that report would be followed regarding any excavation and construction for the garage expansion.

Expansion of the garage would provide enough parking spaces to accommodate the approximately 185 spaces of unmet parking demand in the existing-plus-project condition on a peak special event weekday. This alternative would meet the New Main Library parking requirement of 182 spaces, eliminating the need for the sponsor to seek a Variance, for the Library. Provision of this parking space could incrementally increase the number of special event patrons who would drive to the Civic Center, knowing parking was available. Conversely, the garage expansion could also result in an incremental decrease in traffic during peak special events, since fewer motorists would search for parking in the area.

Under cumulative conditions, there would be a shortage of parking on peak special-event weekdays even with the garage expansion. This unmet demand would be approximately 85 to 160 spaces, compared to an unmet demand of about 655 spaces to 730 spaces with the project.

The potential for discovery of subsurface cultural resources would be greater than under the project because of the larger area that would be excavated. In addition, because the garage addition would require deeper excavation than would construction of the New Main Library and the addition to the existing library at 45 Hyde Street, there would be an increased potential for discovery of cultural resources that could be buried farther below the surface.

The risk of exposure to hazards during construction and renovation activities would be similar to that of the project. Impacts related to the density of development would be similar to those of the proposed project, since development on the project site would be similar to that under the project. Because the New Main Library and the remodeling/expansion of the existing library building would be the same as under the

project, effects on views, shadow and wind, architectural resources, and biology would be the same as those of the project. Employment and patronage would be the same as that under the proposed project, as would the corresponding exposure to seismic hazards. Energy use and cumulative effects related to transportation and air quality would be similar to those of the project.

Expansion of the garage would preclude any expansion of the library loading area in the future for purposes of accommodating larger trucks or more loading spaces. It would also require additional engineering design and structural underpinning should the Pioneer Monument be relocated to the Fulton Street Mall.

NOTES - Alternatives

/1/ Bernheim, Anthony, Associate, Simon Martin-Vegue Winkelstein Moris, facsimile transmission, June 25, 1991.

/2/ Page, Kathryn, Chief of Facilities Development, San Francisco Public Library, telephone conversation, October 30, 1991.

/3/ Lambert, Molly, Acting Collections Manager, San Francisco Arts Commission, telephone conversation, October 28, 1991. The Commission on August 6, 1990, approved a resolution urging the Mayor to urge the Department of City Planning to include analysis of four proposed relocation sites for the Pioneer Monument: in the Fulton Street Mall, at the Market Street end of United Nations Plaza, in Civic Center Plaza across from Civic Auditorium, and near the corner of Larkin and Fulton Streets. A fifth site, in Civic Center Plaza across from City Hall, was added to the list by the Commission on August 5, 1991.

/4/ O'Brien-Kreitzberg & Associates, Inc., Preliminary feasibility study for the relocation of the Pioneer Monument, October 1991.

/5/ Abel, Russell, Project Manager for San Francisco New Main Library, Bureau of Architecture, telephone conversation, June 26, 1991.

/6/ Hayden, Anne, Deputy Director of Development, San Francisco Museum of Modern Art, telephone conversation, July 24, 1991.

/7/ Omni-Group, Inc., Becker and Hayes, Inc., and Hellmuth, Obata & Kassabaum, Inc., "San Francisco Main Library: An Assessment of the Existing Facility and Its Ability to Meet Future Library Needs," December 1987.

/8/ San Francisco Department of City Planning, *The Civic Center: A Development Program*, November 1987.

/9/ Esherick Homsey Dodge and Davis, Walter H. Sobel, FAIA & Associates, et. al., "Courts Expansion Study - Site 1: Main Public Library Building," August 1987.

/10/ Trip generation for court building assumed to be equal to that for "Government Office" in San Francisco Department of City Planning, Guidelines for Environmental Review: Transportation Impacts, April 1991. Percent of travel in the p.m. peak hour is from the same source.

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California State University, Chico
Chico, CA 95929

Bendix Environmental Research, Inc.
1390 Market Street, Suite 418
San Francisco, CA 94102

Blayney Dyett Greenberg
70 Zoe Street, Suite 100
San Francisco, CA 94107
Attn: Michael W. Dyett

Peter Bosselman
Environmental Simulation Laboratory
119 Wurster Hall
University of California
Berkeley, CA 94720

Roger Boyer Associates
456 Montgomery Street, Suite 1400
San Francisco, CA 94104

Cahill Contractors, Inc.
425 California Street, #2300
San Francisco, CA 94104
Attn: Jay Cahill

Center for Southeast Asian
Refugee Resettlement
875 O'Farrell Street
San Francisco, CA 94109
Attn: Vu-Duc Vuong

Chinatown Resource Center
1525 Grant Avenue
San Francisco, CA 94133

Coalition for San Francisco
Neighborhoods
Mrs. Dorice Murphy
175 Yukon Street
San Francisco, CA 94114

Concerned Business Persons of
the Tenderloin
365 Eddy Street
San Francisco, CA 94102
Attn: Adam Gottstein

Joseph Cortiz
2853 22nd Street
San Francisco, CA 94110

The Reverend Kelly Cullen
133 Golden Gate Avenue
San Francisco, CA 94102

DKS Associates
1956 Webster Street, #300
Oakland, CA 94612

Downtown Association
582 Market Street
San Francisco, CA 94105
Attn: Mr. Lee Dolson

EIP Associates
150 Spear Street, #1500
San Francisco, CA 94105
Attn: Barbara Phillips

Food and Fuel Retailers for
Economic Equality
770 L Street, Suite 960
Sacramento, CA 95814
Attn: Doug Stevens,
State Coordinator

The Foundation for San Francisco's
Architectural Heritage
2007 Franklin Street
San Francisco, CA 94109
Attn: Mark Ryser
Executive Director

Friends of the Library
45 Hyde Street, 2nd Floor
San Francisco, CA 94102
Attn: Jane Winslow

GROUPS AND INDIVIDUALS (Continued)

Gensler and Associates
550 Kearney Street
San Francisco, CA 94103
Attn: Peter Gordon

Gray Panthers of S.F.
1182 Market Street, Suite 203
San Francisco, CA 94102

Greenwood Press, Inc.
P.O. Box 5007
Westport, CT 06881-9990
Attn: Eric LeStrange

Gruen, Gruen & Associates
564 Howard Street
San Francisco, CA 94105

Jim Haas
633 Battery St. 5th Floor
San Francisco, CA 94133

Winchell Hayward
208 Willard North
San Francisco, CA 94118

Sue Hestor
870 Market Street, Room 1121
San Francisco, CA 94102

The Jefferson Company
1700 California Street, #470
San Francisco, CA 94109

Kaplan/McLaughlin/Diaz
222 Vallejo Street
San Francisco, CA 94111
Attn: Jan Vargo

Legal Assistance to the Elderly
Brent Kato
1453 Mission Street, Fifth Floor
San Francisco, CA 94103

Robert Meyers Associates
582 Market Street, Suite 1208
San Francisco, CA 94104

Nichols-Berman
142 Minna Street
San Francisco, CA 94105
Attn: Louise Nichols

North of Market Planning Coalition
295 Eddy Street
San Francisco, CA 94102
Attn: Nancy Russell

North of Market Senior Services
333 Turk Street
San Francisco, CA 94012
Attn: Vera Haile

Page & Turnbull
364 Bush Street
San Francisco, CA 94104

Pillsbury, Madison & Sutro
P.O. Box 7880
San Francisco, CA 94120
Attn: Marilyn L. Siems

Planning Analysis & Development
530 Chestnut Street
San Francisco, CA 94133
Attn: Gloria Root

Mrs. G. Bland Platt
362 Ewing Terrace
San Francisco, CA 94118

San Francisco Beautiful
41 Sutter Street, #709
San Francisco, CA 94104
Attn: Donna Casey,
Executive Director

San Francisco Building and
Construction Trades Council
2660 Newhall Street, Room 116
San Francisco, CA 94124-2527
Attn: Stanley Smith

San Francisco Chamber of Commerce
465 California Street
San Francisco, CA 94104
Attn: Donald Doyle

San Francisco Convention &
Visitors Bureau
201 3rd Street, Suite 900
San Francisco, CA 94103
Attn: George D. Kirkland,
Executive Director

GROUPS AND INDIVIDUALS (Continued)

San Francisco Labor Council
510 Harrison Street
San Francisco, CA 94105-3104
Attn: Walter Johnson

San Francisco Planning &
Urban Research Association
312 Sutter Street
San Francisco, CA 94108

San Franciscans for Reasonable Growth
241 Bartlett Street
San Francisco, CA 94110
Attn: David Jones

San Francisco Retail Merchants
582 Market Street
San Francisco, CA 94105

San Francisco Tomorrow
942 Market, Room 505
San Francisco, CA 94102
Attn: Tony Kilroy

Sedway Cooke Associates
101 Howard Street
San Francisco, CA 94105

Sierra Club
730 Polk Street
San Francisco, CA 94109
Attn: John Holtzclaw

Skidmore Owings & Merrill
333 Bush Street
San Francisco, CA 94104
Attn: Jerry Goldberg

Square One Film & Video
725 Filbert Street
San Francisco, CA 94133

Tenants and Owners Development Corp.
230 - Fourth Street
San Francisco, CA 94103
Attn: John Elberling

Tenderloin Housing Clinic
126 Hyde Street
San Francisco, CA 94102
Attn: Randy Shaw

Tenderloin Neighborhood Assn.
55 Mason Street
San Francisco, CA 94102
Attn: Hank Wilson

Tenderloin Neighborhood
Development Council
230 Hyde Street
San Francisco, CA 94102
Attn: B.J. Barron

Tenderloin Senior Organizing Project
220 Golden Gate Avenue, Rm. 410
San Francisco, CA 94102
Attn: Diana Samuelson

Theater Row Business Association
490 Geary Street
San Francisco, CA 94102
Attn: Kathy Opsather

Jon Twichell Associates
143 Connecticut Street
San Francisco, CA 94107

William Turnbull Associates
Pier 1 1/2
San Francisco, CA 94111

Union Square Association
323 Geary Street, Suite 710
San Francisco, CA 94102
Attn: Edward H. Lawson

United Nations Plaza Assn.
77 McAllister Street
San Francisco, CA 94102
Attn: Herb Gimpel

Capital Planning Department
Univ. of California, San Francisco
145 Irving Street
San Francisco, CA 94122
Attn: Bob Rhine

Van Ness Avenue Association
825 Van Ness Avenue
San Francisco, CA 94109
Attn: Greg Holzman

Van Ness & Market Cen. Bus. Assn.
333 Hayes Street
San Francisco, CA 94102
Attn: Evelio Badia

GROUPS AND INDIVIDUALS (Continued)

Calvin Welch
Council of Community Housing Organizations
409 Clayton Street
San Francisco, CA 94117

Whisler-Patri
P. O. Box 7054
San Francisco, CA 94120-7054
Attn: Marie Zeller

Bethea Wilson & Associates
Art in Architecture
2028 Scott, Suite 204
San Francisco, CA 94115

Karen Wood
35 Sequoia Way
San Francisco, CA 94127

ADJACENT PROPERTY OWNERS

347/002,004,006-007,009-015; 348/009
Hastings College of the Law, University of California
75 Hyde Street
San Francisco, CA 94102

347/005
Bancap Hotel Properties II
6265 East 2nd Street
Long Beach, CA 90803

347/008
City Property

351/035
General Services Administration
Real Property Management Division
525 Market Street
San Francisco, CA 94105

351/022
Shorenstein Nederlander Productions of San Francisco
c/o Milton Meyer & Co.
1 California Street
San Francisco, CA 94111

355/003
Grahm Investment Ltd.
1759 23rd Avenue
San Francisco, CA 94122

355/004
Victor G. Kyriakis
Edna & Frank Kyriakis
215 Loyola Dr.
Millbrae, CA 94030

355/005
C. Randel
c/o John J. Dito & Son
596 Pacific Avenue
San Francisco, CA 94133

355/008,011,012
Wells Fargo Bank
c/o Real Property Mgmt. #931
P. O. Box 63931
San Francisco, CA 94163

765/002
Department of General Services
Office of Program Devel./Mgmt.
400 P Street, Room 3460
Sacramento, CA 95814

788/001
City Property

812/001
City Property

3701/050
Western Investment Real Estate Trust
3450 California St.
San Francisco, CA 94118

3702/051
Angelo & Yvonne Sangiacomo
c/o Trinity Properties
333 Bay St.
San Francisco, CA 94133

PROJECT SPONSOR

San Francisco Library Commission
San Francisco Public Library
200 Larkin Street
San Francisco, CA 94102
Attn: Tim Williams

Asian Art Museum
Golden Gate Park
San Francisco, CA 94118
Attn: Judy Teichman

PROJECT ARCHITECTS

Department of Public Works
Bureau of Architecture
Room 265 City Hall
San Francisco, CA 94102
Attn: Norman Karasick

Department of Public Works
Bureau of Architecture
45 Hyde Street, Room 300
San Francisco, CA 94102
Attn: Russell Abel

Pei Cobb Freed & Partners
600 Madison Avenue
New York, NY 10022
Attn: Jennifer Sage

Simon Martin-Vegue Winkelstein Moris
501 Second Street
San Francisco, CA 94107
Attn: Anthony Bernheim

MEDIA

Associated Press
1390 Market Street, Suite 318
San Francisco, CA 94102
Attn: Bill Shiffman

Leland S. Meyerzove
KPOO - FM
P.O. Box 6149
San Francisco, CA 94101

San Francisco Bay Guardian
2700 - Nineteenth Street
San Francisco, CA 94110
Attn: Patrick Douglas, City Editor

San Francisco Business Times
325 - 5th Street
San Francisco, CA 94107
Attn: Tim Turner

San Francisco Chronicle
925 Mission Street
San Francisco, CA 94103
Attn: Ingfei Chen

San Francisco Examiner
P.O. Box 7260
San Francisco, CA 94120
Attn: Gerald Adams

The Sun Reporter
1366 Turk Street
San Francisco, CA 94115

Tenderloin Times
146 Leavenworth Street
San Francisco, CA 94102
Attn: Rob Waters

LIBRARIES

Document Library
City Library - Civic Center
San Francisco, CA 94102
Attn: Faith Van Liere

Environmental Protection Agency
Library
75 Hawthorne Street
San Francisco, Ca 94105
Attn: Jean Circiello

Stanford University Libraries
Jonsson Library of Government
Documents
State and Local Documents Division
Stanford, CA 94305

Government Publications Department
San Francisco State University
1630 Holloway Avenue
San Francisco, CA 94132

Hastings College of the Law - Library
200 McAllister Street
San Francisco, CA 94102-4978

IX. APPENDICES

APPENDIX A: Initial Study

APPENDIX B: Architectural Resources

APPENDIX C: Wind Study Methodology

APPENDIX D: Transportation

APPENDIX E: Air Quality

APPENDIX F: Typical Noise Levels

APPENDIX A: INITIAL STUDY

NOTICE THAT AN
ENVIRONMENTAL IMPACT REPORT
IS DETERMINED TO BE REQUIRED

Date of this Notice: April 11, 1991

Lead Agency: City and County of San Francisco, Department of City Planning
450 McAllister Street, 6th Floor, San Francisco, CA 94102

Agency Contact Person: Carol Roos **Telephone:** (415) 558-6389

Project Title: 90.808E:
Renovation of the Existing San Francisco Main Library Building and Construction of a New San Francisco Main Library and Fulton Street Mall

Project Sponsor: San Francisco Library Commission; Asian Art Commission; S.F. Dept of Public Works
Contact Person: Russell Abel, Project Manager
Telephone: (415) 554-8455

Project Address: 100 Larkin Street and 200 Larkin Street
Assessor's Block and Lot: Block 354, Lot 1; Block 353, Lot 1
City and County: San Francisco

Project Description: Construction of a six-story-plus-basement, approximately 80-foot-tall library building after replacing an existing parking lot and demolishing or moving the existing one-story 100 Larkin Street City office building. The new Main Library would contain approximately 402,000 square feet of building area on a full city block bounded by Grove, Hyde, Fulton and Larkin Streets. The project would reconstruct the ramp leading to Brooks Hall. The new library would occupy approximately 65% of the block. The existing Main Library building would be remodeled and expanded into the space now occupied by the City office building at 45 Hyde Street, which would be demolished. The old library building would then be occupied by the Asian Art Museum. Fulton Street between Larkin and Hyde Streets, currently used for on-street parking, would be converted into a pedestrian mall once the new library and Asian Art Museum portions of the project were completed.

THIS PROJECT MAY HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT AND AN ENVIRONMENTAL IMPACT REPORT IS REQUIRED. This determination is based upon the criteria of the Guidelines of the State Secretary for Resources, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of Significance), and the following reasons, as documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

Please see attached Initial Study.

Deadline for Filing an Appeal of this Determination to the City Planning Commission: April 21, 1991.

An appeal requires: 1) a letter specifying the grounds for appeal, and;
2) a $75.00 filing fee.

Barbara Sahm for

BARBARA W. SAHM, Environmental Review Officer

ER5 6/85

SAN FRANCISCO MAIN LIBRARY
INITIAL STUDY
90.808E

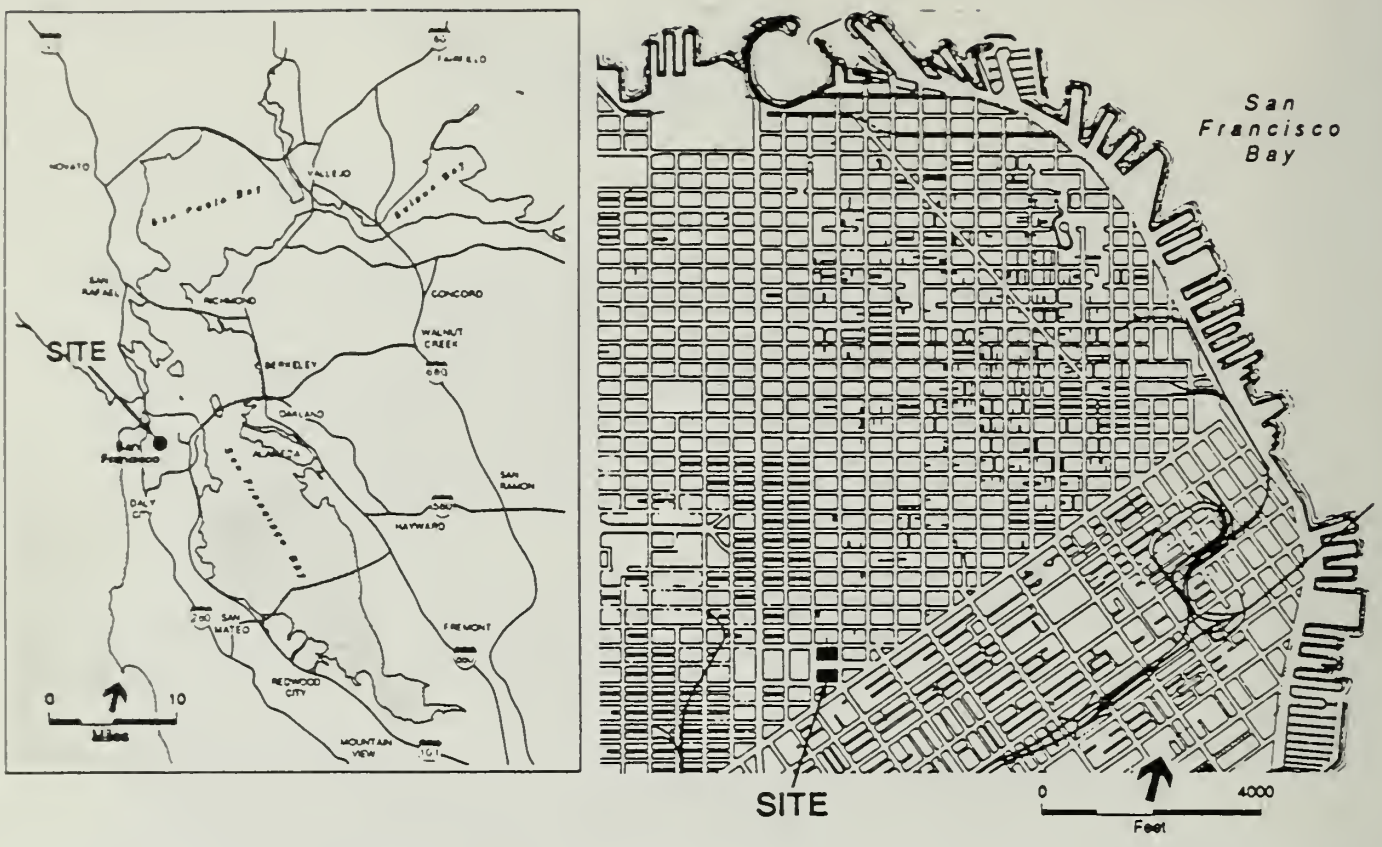
I. PROJECT DESCRIPTION

The project site includes the block bounded by Larkin Street on the west, Fulton Street on the north, Hyde Street on the east, and Grove Street on the south, Lot 1 of Assessor's Block 354 (New Library block); the block directly north, bounded by Larkin, McAllister, Hyde, and Fulton Streets, Lot 1 of Assessor's Block 353 (Asian Art Museum block); and Fulton Street between Larkin and Hyde Streets. The site is located at the southeastern corner of the San Francisco Civic Center (see Figure 1). The New Library block is currently occupied by a 117-space surface parking lot, a 7,950-square-foot (sq.ft.), single-story City office building with five parking spaces at 100 Larkin Street, the Pioneer Monument statue, and landscaping. The Asian Art Museum block is currently occupied by the existing 175,000-sq.ft., three-story Main Library, a 45,000-sq.ft., three-story City office building at 45 Hyde Street, and seven parking spaces. The project would also convert the block of Fulton Street between the New Library block and the Asian Art Museum Block (between Larkin and Hyde Streets) to a pedestrian mall, connecting Civic Center Plaza and United Nations Plaza in a three-block long pedestrian mall from Market Street to City Hall. The three components to be analyzed as the project in the EIR are under separate sponsorship and would proceed largely in separate phases.

The New Library block is south of the existing San Francisco Main Library, across Fulton Street, and across Larkin Street to the east of Civic Center Plaza, one block east of City Hall. Other public buildings are located in the project vicinity (see Section IV.B.1., Land Use).

The proposed new Main Library would be a six-story-plus-basement structure occupying about 402,000 sq.ft. The building would range from 77 feet to 84 feet in height at the roof cornice, with the variation due to the northwest-to-southeast downward grade of the site; a tower near the southeast corner would rise approximately 15 feet above the roof line of most of the the rest of the building. As part of the project, the existing Pioneer Monument at the southeast corner of the New Library block would be relocated to another site in the Civic Center.

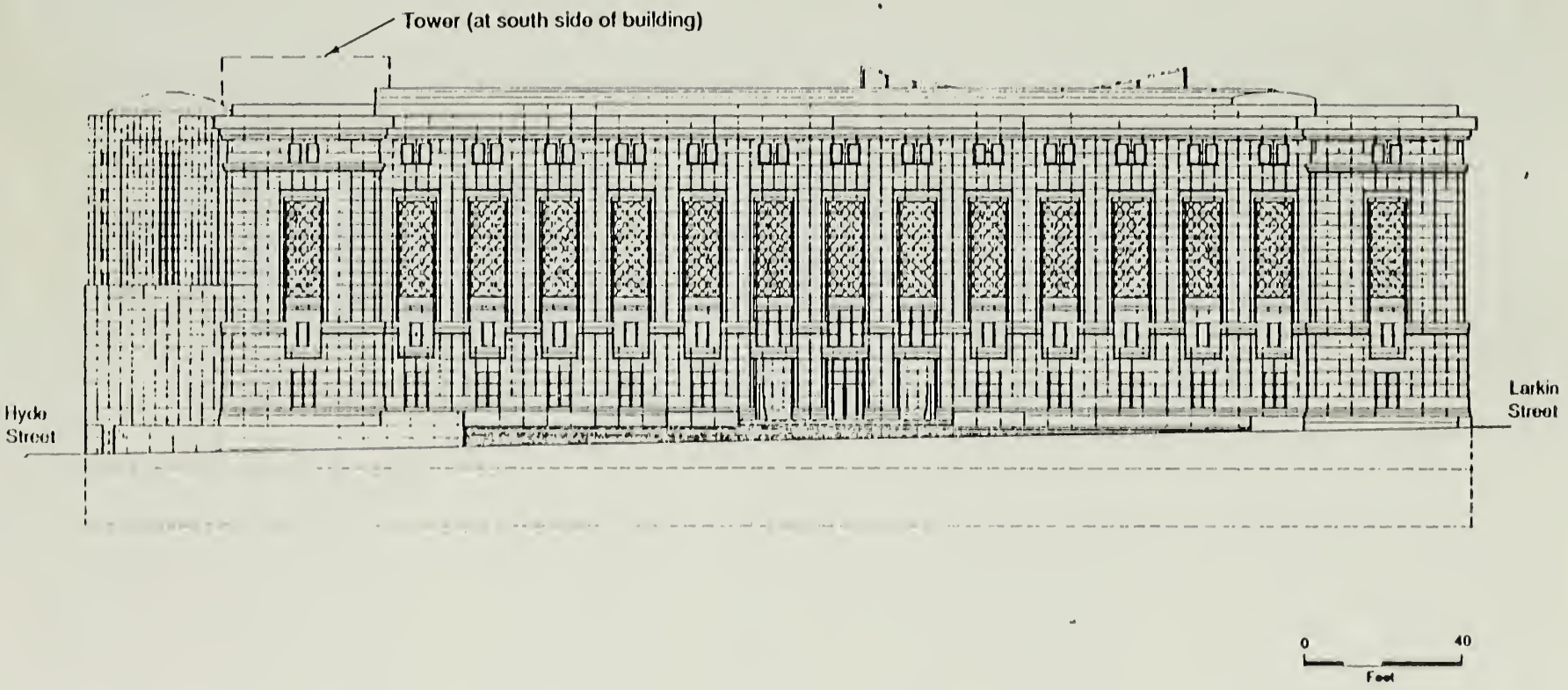
Architecturally, the north and west facades of the new Main Library would be similar in design and exterior cladding to the existing library (see Figure 2, p. 4). The east facade and most of the south side of the new library would use the same exterior granite as the existing library, but would be more contemporary in design (see Figure 3, p. 5).



SF Main Library ■

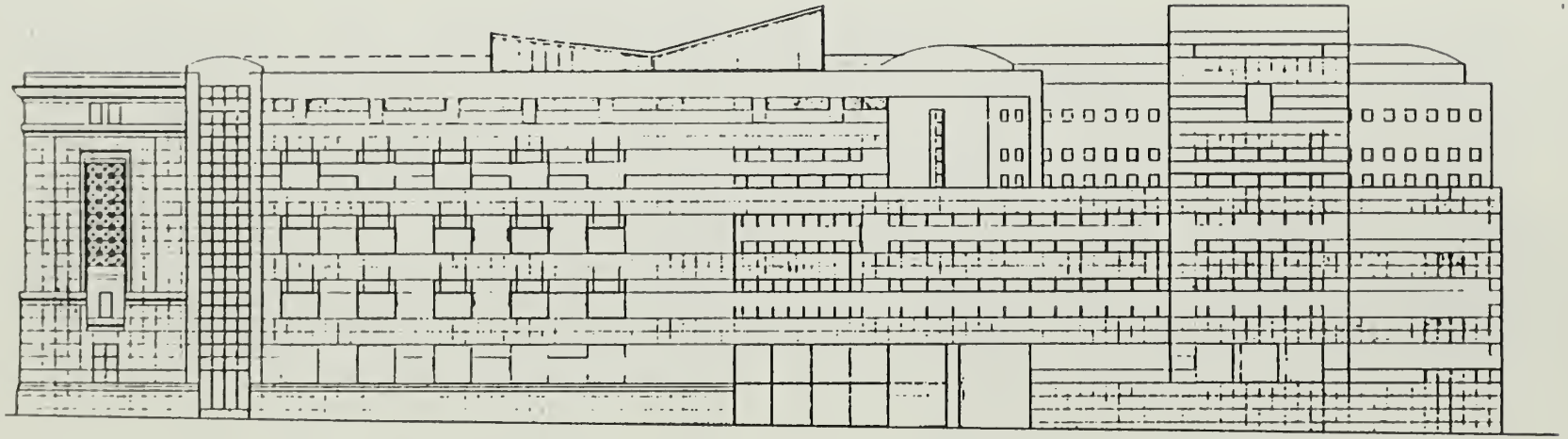
SOURCE: Environmental Science Associates, Inc.

Figure 1
Project Location



SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

Figure 2
Fulton Street (North) Elevation



SOURCE: Associated Architects: Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris

SF Main Library ■

Figure 3
Grove Street (South) Elevation

The basement level would contain approximately 89,500 sq.ft. of indoor space and a covered loading area. Included would be a 300-seat auditorium with 5,000-sq.ft. sub-basement, meeting rooms seating another 300 persons, a cafe, closed book stacks, storage, and support and mechanical facilities. There would be a loading dock, 12 parking spaces for staff, and parking for the library "bookmobile." Vehicle access to this level would be through a rebuilt ramp from Hyde Street that would also serve as the truck entrance to Brooks Hall beneath Civic Center Plaza. The 21-foot-wide ramp would be similar to an existing ramp leading to Brooks Hall. Pedestrian access to Brooks Hall would be via the Civic Auditorium and Civic Center Plaza.

The Main Floor and Upper Main Floor would be integrated via a main stairway and would make up the areas within the library most open to the public. The Main Floor, with about 59,000 sq.ft., would be accessible from Grove Street and would include the book checkout and return desks. The Upper Main Floor, with approximately 41,000 sq.ft. of public space and staff offices, would include entrances from both Fulton and Larkin Streets; patrons would go down to the Main Floor to gain access to all areas of the library. These two floors would include "first-stop" reference, hearing-impaired and blind services, a gift shop, and other work rooms and offices. A central, circular skylight well would extend from the Upper Main Floor to the roof; a staircase adjacent to the skylight well would extend up to the fourth floor. Elevators would be located at the north side of the building.

Floors two through four would include open and closed book stacks, meeting and study rooms, service desks and work rooms. The area of these floors would total about 53,500 sq.ft., 55,000 sq.ft. and 51,000 sq.ft., respectively. Floor five would contain administrative offices, the San Francisco History Room, rare books, a computer facility, stacks and a roof garden; it would total about 47,500 sq.ft.

The project would also include the separate conversion of the existing Main Library building to house the Asian Art Museum, which now occupies one wing of the M.H. deYoung Museum in Golden Gate Park. This portion of the project would be carried out by the Asian Art Commission, operator of the museum. The Asian Art Museum would occupy the entire existing library building. Included in the proposed renovations would be seismic strengthening, adding floor space to the existing building (a new mezzanine level), and demolishing the City office building at 45 Hyde Street and replacing it with an addition to the existing library building. Including this addition, the building would expand from approximately 174,000 sq.ft. to about 224,000 sq.ft. The museum would include an auditorium/theater seating approximately 400 people./1/

Fulton Street from Larkin to Hyde Streets, between the two project blocks, would be used as a construction staging area, first for the new Main Library and then for the remodeling of the existing library building and installation of the Asian Art Museum. It would then be converted to a pedestrian mall, according to current City plans.

The project would involve either removing or demolishing the existing City office building at 100 Larkin Street and demolishing the existing surface-level parking lot./2/ This would result in the loss of 7,950 square feet of office space and 122 parking spaces (117 in the parking lot and five associated with the office building). The project would also include demolition of the City office building at 45 Hyde Street, eliminating 45,000 sq.ft. of office space and seven parking spaces. Construction of the Fulton Street Mall would eliminate 92 parking spaces. Net increase in floor area on the project site would be about 400,000 sq.ft. Net increase in open space, including the Fulton Street Mall, would be about 70,000 sq.ft. Approximately 210 parking spaces would be eliminated.

Construction of the new Main Library is expected to take about 30 months and cost approximately $77 million (1990 dollars). With a projected March 1993 start date for construction, the new building would be ready for occupancy by March 1996. Remodeling the existing Main Library building to accommodate the Asian Art Museum is expected to take a minimum of two years and cost approximately $55 million (1990 dollars). Occupancy by the museum is proposed for 1999 or 2000. Construction of the Fulton Street Mall would take about one year and cost about $6.3 million (1992 dollars). The project sponsor for the New Main Library is the San Francisco Library Commission. The architect is Pei Cobb Freed & Partners of New York in association with Simon Martin-Vegue Winkelstein Moris of San Francisco. The project sponsor for the Asian Art Museum is the Asian Art Commission. The project sponsor for the Fulton Street Mall is the San Francisco Department of Public Works.

NOTES - Project Description

/1/ Vickers, Jennifer, planning assistant, Asian Art Museum, telephone conversation, November 15, 1990.

/2/ The office building may be demolished or may be moved; the City has not yet made a final decision. Russell Abel, project manager, City Architect's office, telephone conversation, November 27, 1990.

II. INTRODUCTION

The new Main Library EIR will incorporate information, as appropriate, from Program EIRs that have been previously published. Most of that information is related to cumulative impacts of downtown growth contained in the *Mission Bay EIR* (Case No. 86.505E, Final EIR certified August 23, 1990), *South of Market Plan EIR* (Case No. 85.463E, Final EIR certified December 7, 1989), and the *Downtown Plan EIR* (Case No. EE81.3, Final EIR certified October 18, 1984). The *Mission Bay EIR* covers the impacts of potential development in a 300-acre area just south of the Greater Downtown, from Townsend Street to Mariposa Street, east of the I-280 freeway. The *South of Market Plan EIR* analyzes impacts of development under the South of Market Plan development controls and alternatives in the area generally south of Mission Street to the Mission Bay planning area and east of U.S. 101 to the Rincon Hill area east of Second Street. The *Downtown Plan EIR* analyzes the impacts of various development policy alternatives in the C-3 (Downtown Commercial) zoning districts in San Francisco.

The *Mission Bay* and *South of Market Plan EIRs* include the most current estimates of employment growth for the Downtown & Vicinity and for the rest of the City; revised analysis and conclusions regarding overall cumulative transportation impacts in the future; and new cumulative air quality information. (The term "Downtown & Vicinity" means the C-3 District and the areas around it: South of Market, Mission Bay, South Van Ness, Civic Center, and the Northeastern Waterfront. See *Mission Bay EIR*, Vol. II, pp. IV.4-5. The project site is included in the Downtown & Vicinity.) The *Downtown Plan EIR* contains other cumulative impact information regarding such topics as energy consumption and seismic effects that also is applicable to the new Main Library project.

Where information from those areawide EIRs is presented in the new Main Library EIR, it will be incorporated by reference with a summary, pursuant to CEQA Sections 21061 and 21100 (see also State CEQA Guidelines Section 15150). Those reference documents are available for public review at the Office of Environmental Review, 450 McAllister Street, San Francisco, at the San Francisco Main Library, and at various branch libraries.

III. SUMMARY OF POTENTIAL ENVIRONMENTAL EFFECTS

A. EFFECTS FOUND TO BE POTENTIALLY SIGNIFICANT

The new Main Library project is examined in this Initial Study to identify potential effects on the environment. In addition to potential cumulative impacts, some project-specific effects have been determined to be potentially significant, and will be analyzed in an Environmental Impact Report (EIR). They include: construction noise; project-related transportation; historic, architectural and cultural resources; traffic-generated air quality; shadow; wind; toxics; and geology. Other issues that will be included in the EIR for informational purposes are land use; relationship of the proposed project to the Master Plan and City Planning Code; urban design; visual quality; and seismicity.

B. EFFECTS FOUND NOT TO BE SIGNIFICANT

The following potential impacts were determined either to be insignificant or to be mitigated through measures included in the project. As discussed in this section, these items require no further environmental analysis in the EIR:

Land Use: The project would increase the intensity of land uses on the site. It would retain the San Francisco Main Library in the Civic Center and would introduce a new museum; both are principal permitted uses in a P zoning district. The intensity of use would decrease at the Fulton Street Mall.

Glare: Mirrored glass would not be used in construction. The project would not generate light or glare impacts on other properties.

Housing: The proposed project would not displace any existing housing units. A total of 160 new full-time jobs would be created in the project area. Housing demand as a result of these new jobs would not substantially affect the housing market in San Francisco.

Operational Noise: After completion, building operation and project-related traffic would not perceptibly increase noise levels in the site vicinity. Operational noise would be regulated by the San Francisco Noise Ordinance and the project would conform to the Noise Guidelines of the Environmental Protection Element of the *Master Plan*. A mitigation measure to reduce operational noise is included in the project (see p. 34).

Construction Air Quality: Project construction would have short-term impacts on air quality in the site vicinity. Mitigation measures to reduce particulate and hydrocarbon emissions generated during construction activities are included as part of the project (see p. 34).

Utilities/Public Services: The proposed project would increase demand for public services, but demand attributable to the project would not require additional personnel or equipment, other than connections to existing service, according to service providers.

Biology: The project would not affect any rare, threatened or endangered plant life, animal life or habitat. The project would not interfere with any resident or migratory species. Approximately 75 mature trees would be removed, along with about 30,000 sq.ft. of lawn. The project would include landscaping on the Larkin Street frontage of the new Main Library and on the Fulton Street Mall.

Hydrology: A measure to mitigate potential impacts associated with excavation and dewatering is included as part of the project (see p. 34).

Water Quality: The site is largely covered by impervious surfaces; therefore, the project would not affect drainage patterns or water quality. See also the measure referenced above to mitigate the potential impacts of excavation and dewatering.

Energy/Natural Resources: The project would be designed to comply with performance standards of Title 24 of the *California Code of Regulations*. Annual energy use for the new Main Library would be about 46.3 billion Btu. The Asian Art Museum would use approximately the same amount of energy as the existing library; the net increase in energy use would be that associated with the new Main Library. Peak electrical energy and natural gas use would coincide with PG&E's systemwide peaks. Cumulative and indirect effects, including those of the project, are addressed in the EIR prepared for the Downtown Plan.

Hazards: Asbestos could be found within buildings on the project site; potential impacts would be reduced to a level of insignificance through compliance with state law. Mitigation measures to ensure project compliance with the City's Emergency Response Plan are included in the project (see p. 34).

IV. ENVIRONMENTAL EVALUATION CHECKLIST AND DISCUSSION

A. COMPATIBILITY WITH EXISTING ZONING AND PLANS	Not Applicable	Discussed
1) Discuss any variances, special authorizations, or changes proposed to the City Planning Code or Zoning Map, if applicable.	___	X
* 2) Discuss any conflicts with any adopted environmental plans and goals of the City or Region, if applicable.	X	X

The project vicinity includes areas that have been afforded special study by the Department of City Planning. The North of Market Residential Special Use District, which includes a portion of the block immediately north of the Asian Art Museum block and extends generally north and east of the project site, was established to preserve residential buildings in the Tenderloin area. The Mid-Market Rezoning Study Area encompasses an area roughly bounded by Market, Mission, Fifth and Eleventh Streets, including the block immediately south of the New Library block. The South Van Ness area is another potential specific plan study area. The Civic Center is the subject of an area plan included in the *Master Plan* and was the subject of the Mayor's *Civic Center Proposal* of November 1987, which called for construction of a new Main Library, moving the Asian Art Museum into the existing library building once it is remodeled, and creation of a Fulton Street Mall, among other recommendations./1/ The project would not conflict with adopted environmental plans and goals; however, the relationship of the proposed project to the policies of the *Master Plan*, including the *Civic Center Plan*, and provisions of the *City Planning Code*, will be discussed in the EIR.

The project site is located in a P (Public Use) District, which applies to land that is owned by a governmental agency and is in some form of public use. Under this zoning designation, the proposed project would be a principal permitted use and, as such, would not be subject to height and bulk restrictions of the *City Planning Code* (Sec. 234 and Sec. 234.1). The areas to the north and west of the project site are generally zoned P and contain other public buildings in San Francisco's Civic Center. The block directly south of the New Library block and a portion of the block to the east are zoned C-3-G (Downtown General Commercial).

NOTE - Zoning and Plans

/1/ Office of the Mayor, City of San Francisco, *Civic Center Proposal*, November 1987.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

B. ENVIRONMENTAL EFFECTS

1) Land Use. Could the project:	Yes	No	Discussed
*(a) Disrupt or divide the physical arrangement of an established community?	___	X	X
*(b) Have any substantial impact upon the existing character of the vicinity?	___	X	X

The 90,000-sq.ft. New Library block is now occupied by a 38,350-sq.ft. parking lot, and the 7,950-sq.ft. 100 Larkin Street City office building, surrounded by landscaping and five parking spaces. On the southeast corner of the block is the Pioneer Monument. The Asian Art Museum block is currently occupied by the existing 175,000-sq.ft., three story Main Library, the 45,000-sq.ft., three-story 45 Hyde Street City office building, and seven parking spaces associated with the two buildings, on the McAllister Street side.

The proposed project, including a library, a museum, two auditoriums, and a pedestrian mall, would constitute a change in land use and an increase in the intensity of the existing land uses on the site, and would retain the San Francisco Main Library in the Civic Center. The proposed project would be a change in land use from office, parking and landscaped open area to a library, and the conversion of the existing library to a museum, with displacement of existing office use. Construction of the Fulton Street Mall would change land use from a public street and parking to open space, a decrease in intensity. Net increase in square footage on the total sites would be about 400,000 sq.ft. Net increase in open space, including the Fulton Street Mall, would be about 70,000 sq.ft. Approximately 210 parking spaces would be eliminated. The uses proposed with the project would be principal permitted uses in this P district, as discussed above.

2) Visual Quality. Could the project:	Yes	No	Discussed
*(a) Have a substantial, demonstrable negative aesthetic effect?	___	X	X
(b) Substantially degrade or obstruct any scenic view or vista now observed from public areas?	___	X	X
(c) Generate obtrusive light or glare substantially impacting other properties?	___	X	X

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The EIR will discuss the project's appearance and possible effects on views. The new library would block public views of City Hall from sidewalks and streets on the south and east sides of the New Library block. The project would add a major new visual element to the Civic Center. Remodeling of the existing library and construction of an addition to the building would not change public views. Construction of the Fulton Street Mall would add additional open space to the Civic Center.

Mirrored glass would not be used in the project; the building would not result in glare affecting other properties. The project would comply with City Planning Commission Resolution 9212 which prohibits the use of mirrored or reflective glass. The EIR, therefore, will not discuss glare.

The EIR will include applicable urban design policies of the *Master Plan.*

3) Population. Could the project:	Yes	No	Discussed
*(a) Induce substantial growth or concentration of population?	___	X	X
*(b) Displace a large number of people (involving either housing or employment)?	___	X	X
(c) Create a substantial demand for additional housing in San Francisco, or substantially reduce the housing supply?	___	X	X

No housing would be displaced from the project site or built on the site. Therefore, the project would not directly affect housing supply. The grass-covered area behind the 100 Larkin Street building is sometimes used by apparently homeless persons as a sleeping area; these people would be displaced by the project.

There are currently 21 people employed on the New Library block: 19 people are employed at the Mayor's Office of Business and Economic Development, the Small Business Advisory Commission and the Office of the Mayor's Liaison for the Arts, all at 100 Larkin Street. These employees would be relocated along with their offices. Two people are employed at the parking lot on the New Library block. These jobs would be lost, although it is possible that the employees could be transferred to other lots run by the same operator. The existing Main Library employs 343 persons (in both the Main Library Building and the annex at 45 Hyde Street), most of whom would be expected to continue working at the new Main Library, where staffing would be up to ten percent greater than at present. Other employment at 45 Hyde Street includes 59 employees of the Bureau of

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Architecture; these employees would be relocated. The Asian Art Museum in Golden Gate Park currently has a staff of 68 full-time employees. In addition, at any given time, the museum has about ten docents and/or volunteers on duty. Most, if not all, of those employees would be expected to continue working at the new museum, which would be expected to employ nearly double the present number of employees./1/

Project-related employment would total approximately 440 full-time equivalent employees -- about 310 at the library and about 130 at the Asian Art Museum./1,2,3/ This would represent an increase of about 80 full-time equivalent employees (22 percent) over the approximately 360 full-time equivalent employees currently on the total site. The 440 jobs would represent approximately 0.1 percent of expected employment in the Downtown & Vicinity in the year 2000, that is about one-tenth of one percent./4/

Assuming that City employees currently working on the site (other than Main Library employees) would be relocated to other offices in the Civic Center area, project employment would result in a total increase of approximately 160 full-time equivalent jobs in the project vicinity (130 museum jobs plus 30 new jobs at the library, with about 80 existing jobs currently on-site not lost but instead relocated in the area). This would represent less than 0.3 percent of the projected increase in employment in the Downtown & Vicinity between 1991 and 2000./4/ Assuming this employment would be new employment in San Francisco, a conservative assumption, the project would result in employment growth that would amount to about 0.2 percent of the projected increase in citywide employment between 1991 and 2000./4/ Using the same assumption, about 134 additional secondary jobs in the Bay Area would result from the multiplier effect of project operation./5/

Cumulative citywide and regional employment effects and the resultant housing demand are discussed in the *Mission Bay EIR* and *South of Market Plan EIR*. San Francisco employment growth will contribute to regional housing demand, as not all workers will live in the City. However, regardless of the type of development in Misson Bay and South of Market, the importance of San Francisco employment as a factor affecting regional housing demand will decline over time, because more housing is expected to be added in the City relative to job growth than in the past. As housing and the labor force continue to grow more rapidly outside San Francisco, people working in San Francisco will represent the same or a smaller percentage of the employed people living elsewhere in the region. San Francisco workers will require about the same share of the region's housing in the future as they did in the early 1980s. San Francisco's effects on the regional housing

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

market will vary in the future. City workers could become more important to the housing market in some close-in communities in western parts of the East Bay and east of the hills along BART corridors, in northern San Mateo County and parts of Marin./6/

Employment on the site would create additional demand for housing in San Francisco. The project-generated housing demand, from the additional 160 employees generated by the project, would not measurably contribute to the San Francisco or regional housing demand. Population and housing require no further analysis in the EIR.

The project would increase the number of persons visiting the Civic Center area. This would affect traffic, parking and transit in the area. These impacts will be discussed in the Transportation section of the EIR.

NOTES - Population

/1/ Where figures include part-time employees, for purposes of analysis, each part-time employee is equal to 0.5 full-time employees. Current employment at the Main Library includes 218 full-time and 125 part-time workers (281 full-time equivalent); project employment would be about 240 full-time and 137 part-time workers (309 full-time equivalent). Museum docents, although volunteers, are counted similarly in order to provide a conservative analysis.

/2/ Abel, Russell, project manager, Bureau of Architecture, San Francisco Department of Public Works, telephone conversations, November 21, 1990, and March 8, 1991.

/3/ Vickers, Jennifer, planning assistant, Asian Art Museum, telephone conversation, November 15, 1990.

/4/ San Francisco Department of City Planning, *Mission Bay EIR*, Table VI.B.22, p. VI.B.64. (Volume Two). The table provides figures for 1986-2000 employment growth; those figures were pro-rated for this analysis.

/5/ Indirect employment projections are based on *1982 Input-Output Model and Economic Multipliers for the San Brancisco Bay Region*, Association of Bay *Area Governments*, 1988 Update. A multiplier of 0.84 was used for both library and museum jobs. The multiplier used was the midpoint between Type I and Type II employment multipliers in this model. This forecast is based on new employment at the Main Library and Asian Art Museum; all Asian Art Museum jobs are considered new for this analysis, although only 57 jobs would be added, because it is assumed that the deYoung Museum could eventually expand into the space currently occupied by the Asian Art Museum in Golden Gate Park. The analysis is therefore conservative. The analysis does not account for lost employment on the project site because it is assumed that all City employees in the 100 Larkin Street and 45 Hyde Street buildings (98 percent of the jobs displaced from the site) would continue working for the City at other Civic Center locations.

/6/ Department of City Planning, *Mission Bay EIR*, Vol. II, pp. VI.C.56-61, 83-84, and 92-97, and *South of Market Plan EIR*, Vol. II, pp. 91-94. Copies may be examined in the Department of City Planning offices, at the San Francisco Main Library and at various branch libraries.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

4) Transportation/Circulation. Could the project:	Yes	No	Discussed
*(a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?	__	X	X
*(b) Interfere with existing transportation systems, causing substantial alterations to circulation patterns or major traffic hazards?	X	__	X
(c) Cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?	__	X	X
(d) Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?	X	__	X

An increased number of visitors to the project site and vicinity as a result of the project (including both the new Main Library and the new Asian Art Museum) would increase demand on existing transportation systems. The number of pedestrians in the area would also increase. The project would alter existing circulation patterns during construction and would permanently alter circulation patterns due to construction of the Fulton Street mall. Project-generated effects on circulation during construction and operation will be discussed in the EIR. The project would decrease the number of parking spaces on the site from about 220 to 12. The number of publicly accessible spaces would decrease from about 210 to none. Localized transportation impacts, including loading impacts, will be analyzed in the EIR.

The proposed project could cause traffic circulation problems and increases in traffic, transit and parking demand, as well as increases in pedestrian traffic. The EIR will discuss trip generation and impacts on vehicular and pedestrian traffic, transit, parking and loading in the project vicinity. The effects of the elimination of the Fulton Street parking spaces for the pedestrian mall, including effects on Farmers' Market operations, will be discussed in the EIR.

The cumulative transportation effects of development in the Downtown & Vicinity, including the project, are analyzed in the *Mission Bay* and *South of Market Plan EIRs*. The new Main Library EIR will discuss and summarize cumulative analysis contained in these EIRs regarding transportation, including the project's relation to cumulative effects.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

5) Noise. Could the project:	Yes	No	Discussed
*(a) Increase substantially the ambient noise levels for adjoining areas?	__	X	X
(b) Violate Title 24 Noise Insulation standards, if applicable?	__	X	X
(c) Be substantially impacted by existing noise levels?	__	X	X

Demolition, excavation, and building construction would temporarily increase noise in the site vicinity. The construction period would last approximately 30 months for construction of the new Main Library, about 24 months for construction of the Asian Art Museum, and about 12 months for the Fulton Street Mall, a total of about 5½ years. Pile driving would be limited primarily to the Main Library/Brooks Hall ramp and the addition to the existing library building; the current design calls for the library building to be placed on a concrete slab foundation. Project construction noise and its possible effects on sensitive receptors will be addressed in the EIR.

The noise environment of the site, like all of greater downtown San Francisco, is dominated by vehicular traffic noise. The Environmental Protection Element of the *San Francisco Master Plan* indicated a day-night background noise level (L_{dn}) of 65 dBA in the Civic Center Area in 1974. Selected streets showed levels of 65 dBA (Larkin Street and Hyde Street north of McAllister Street), 70 dBA (Polk, Hayes, Grove, Fulton, McAllister and Seventh Streets, Golden Gate Avenue and Hyde Street south of McAllister), 75 dBA (Market, Eighth, Ninth, Tenth and Franklin Streets) and 80 dBA (Van Ness Avenue)./1,2/

The Environmental Protection Element of the *Master Plan* contains guidelines for determining the compatibility of various land uses with different noise environments. For libraries, the guidelines recommend that new construction or development should not generally be undertaken where background sound levels exceed 65 dBA. For noise levels starting between 60 and 65 dBA, the guidelines recommend that new construction or development should generally be discouraged. If development does proceed, the guidelines recommend a detailed analysis of noise reduction requirements be made and needed noise insulation features be included in the building design. The project architect has indicated that noise insulation measures would be included as part of the design.

The proposed project would not include housing; therefore, Title 24 Noise Standards would not be applicable.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Project operation would not result in perceptibly greater noise levels than those existing in the area. The new Main Library and Asian Art Museum would comply with all San Francisco ordinances and regulations relating to noise. The amount of traffic generated by the project during any hour of the day, and cumulative traffic increases at the time of project completion, would cause traffic noise levels to increase by up to one dBA L_{eq} or less. To produce a noticeable increase in environmental noise, a doubling of existing traffic volume would be required; traffic increases of this magnitude would not occur with anticipated cumulative development including the project./3/

The project would comply with the San Francisco Noise Ordinance, San Francisco Police Code Section 2909, "Fixed Source Noise Levels." Section 2909 regulates mechanical equipment noise. The project site and much of the surrounding area are within a P zoning district, for which there are no specific limits included in Section 2909; therefore, the project would be required to comply with the noise limits of the nearest district in which limits are set forth in the law. In the C-3-G district to the south of the project site, the ordinance limits equipment noise levels at the property line of an affected structure to 70 dBA between 7 a.m. and 10 p.m. During lulls in traffic, mechanical equipment generating 70 dBA could dominate the noise environment at the site. However, the new Main Library would include features to limit mechanical equipment noise levels to 60 dBA. In the RC-4 district to the north of the project site, the ordinance limits equipment noise levels at the property line of an affected structure to 60 dBA between 7 a.m. and 10 p.m. The Asian Art Museum and the new Main Library would comply with this limit. As equipment noise would be limited to 60 dBA to meet this nighttime limit, it would not be perceptible above the ambient noise levels in the project area; operational noise requires no further analysis and will not be included in the EIR.

NOTES - Noise

/1/ San Francisco Department of City Planning, *Master Plan*, Environmental Protection Element, December 1987, p. I.6.13, 15.

/2/ dBA is a measure of sound in units of decibels (dB). The "A" denotes the A-weighted scale, which simulates the response of the human ear to various frequencies of sound. L_{dn}, the day-night average noise level, is a noise measurement based on human reaction to cumulative noise exposure over a 24-hour period, taking into account the greater annoyance of nighttime noises; noise between 10 p.m. and 7 a.m. is weighted 10 dBA higher than daytime noise.

/3/ See *Downtown Plan EIR*, Vol. 1, Section IV.E generally and Section IV.J., pp. IV.J.8-18. Increases of 1 dBA or less in environmental noise are not noticeable by most people outside a laboratory situation (National Academy of Sciences, Highway Research Board, Research Report No. 117 (1971)). (See also FHWA Highway Traffic Noise Prediction Model, Report #FHWA-RD-77-108, December 1978, p. 8, regarding doubling of traffic volumes producing increases of 3 dBA or more, which are noticed by most people).

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

6) Air Quality/Climate. Could the project:	Yes	No	Discussed
*(a) Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?	X		X
*(b) Expose sensitive receptors to substantial pollutant concentrations?		X	X
(c) Permeate its vicinity with objectionable odors?		X	X
(d) Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect public areas, or change the climate either in the community or region?	X		X

Two types of air quality impacts could be expected from the proposed project: long term impacts related to use and operation of the project, and short term impacts from construction activity. Project-related traffic and cumulative traffic in the Downtown & Vicinity can be expected to contribute to existing air pollution near the project site and will be discussed in the EIR.

Construction activities would temporarily affect local air quality. Demolition and construction activities would not involve burning of any materials and would not create objectionable odor. Demolition, grading and other construction activities would temporarily affect local air quality for about 30 months for construction of the new Main Library, about 24 months for construction of the Asian Art Museum, and about 12 months for the Fulton Street Mall, a total of about five-and-a-half years, causing a temporary increase in particulate dust and other pollutants. Dust emission during demolition and excavation would increase particulate concentrations near the site. Dustfall can be expected at times on surfaces within 200 to 800 feet. Under high winds exceeding 12 miles per hour, localized effects including human discomfort might occur downwind from blowing dust. Construction dust is composed primarily of particularly large particles that settle out of the atmosphere more rapidly with increasing distance from the source. More of a nuisance than a hazard for most people, this dust could affect persons with respiratory diseases, as well as sensitive electronics or communications equipment. The project sponsor would require the contractor to wet down the construction site twice a day during construction to reduce particulates by at least 50 percent; would require covering soil, sand and other material; and would require street sweeping around demolition and construction sites at least once per day (see mitigation, p. 34).

Diesel-powered equipment would emit, in decreasing order by weight, nitrogen oxides, carbon monoxide, sulfur oxides, hydrocarbons and particulates. This would increase local

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

concentrations temporarily but would not be expected to increase the frequency of violations of air quality standards. The project sponsor would require the project contractor to maintain and operate construction equipment in such a way as to minimize exhaust emissions (see mitigation, p. 34). Construction air quality effects require no further analysis.

The cumulative effects on air quality of traffic emissions from traffic generated by development in the Downtown & Vicinity including the project are analyzed in the *Mission Bay* and *South of Market Plan EIRs*. The analysis and conclusions of these EIRs remain current regarding future and present conditions. The cumulative analysis in the *Mission Bay* and *South of Market Plan EIRs* regarding air quality will be incorporated by reference and the project's effects in relation to cumulative effects will be discussed in the EIR.

Civic Center Plaza, located across Larkin Street to the west of the project site, is subject to *City Planning Code* limitations on additional shadow on a public open space (Section 295).

The EIR will discuss potential shadowing impacts of the project on sidewalks, parks and other open spaces. The analysis will include shadow diagrams.

The EIR will also include a discussion of the wind effects of the project, including results of wind tunnel testing.

7) Utilities/Public Services. Could the project:	Yes	No	Discussed
*(a) Breach published national, state or local standards relating to solid waste or litter control?	___	X	___
*(b) Extend a sewer trunk line with capacity to serve new development?	___	X	___
(c) Substantially increase demand for schools, recreation or other public facilities?	___	X	___
(d) Require major expansion of power, water, or communications facilities?	___	X	___

The proposed project would increase demand for public services, but not beyond what would be expected in the project area. Service providers have indicated that demand attributable to the project would not require additional personnel or equipment./1/

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

NOTE - Utilities/Public Services

/1/ Copies of memoranda of telephone conversations with service providers and service provider questionnaire responses are available for review at the Department of City Planning, 450 McAllister Street, San Francisco.

8) Biology. Could the project:	Yes	No	Discussed
*(a) Substantially affect a rare or endangered species of animal or plant or the habitat of the species?	__	X	X
*(b) Substantially diminish habitat for fish, wildlife or plants, or interfere substantially with the movement of any resident or migratory fish or wildlife species?	__	X	__
(c) Require removal of substantial numbers of mature, scenic trees?	__	X	X

The New Library block is covered primarily by impervious surfaces and lawns, including a parking lot and the 100 Larkin Street building with adjacent parking spaces and lawns on the north, west, and south sides of the office building, as well as between the existing parking lot and Hyde Street. Approximately 75 mature trees, primarily sycamores, are planted along the Fulton and Larkin Street frontages, including street trees in the sidewalk, and around the parking lot. At least one mature, scenic tree is located behind the 100 Larkin Street building. None of the trees on the project site are rare or endangered species./1/ Both the trees and grass would be removed for construction of the new Main Library. The new library would include grass alongside the Larkin Street entrance and street trees on Fulton Street. The Asian Art Museum block is covered primarily by impervious surfaces, including the existing Main Library, the 45 Hyde Street building and a paved parking area. The Fulton and Larkin Street frontages of the existing library building are planted with grass; this would be retained. The Fulton Street mall would also include planting of grass and street trees. The project would not affect any threatened, rare or endangered plant life or habitat. The project would not interfere with any resident or migratory species. This topic will not be discussed in the EIR.

NOTE - Biology

/1/ Thomas, John, Assistant Landscape Architect, San Francisco Department of Public Works, telephone conversation, April 9, 1991.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

9) Geology/Topography. Could the project:	Yes	No	Discussed
*(a) Expose people or structures to major geologic hazards (slides, subsidence, erosion and liquefaction).	X		X
(b) Change substantially the topography or any unique geologic or physical features of the site?		X	

A preliminary geotechnical investigation has been made for the project, and a detailed geotechnical report would be prepared by a California-licensed geotechnical engineer prior to commencement of construction. The project sponsor and contractor would follow the recommendations of the final report regarding any excavation and construction for the project. Geologic and seismic concerns, including a summary of the geotechnical report and a discussion of seismic issues, will be included in the EIR.

10) Water. Could the project:	Yes	No	Discussed
*(a) Substantially degrade water quality, or contaminate a public water supply?		X	X
*(b) Substantially degrade or deplete ground-water resources, or interfere substantially with groundwater recharge?		X	X
*(c) Cause substantial flooding, erosion or siltation?		X	X

Most of the New Library block is covered by impervious surfaces (consisting of an asphalt parking lot and an office building), or by lawn. The project would cover nearly the entire site with a new library building and other impervious surfaces (steps, plazas, etc.). The increase in impervious surface area would result in an increase in surface runoff from the site.

Runoff from the site contains common urban water pollutants, such as oil and metals from automobiles, fertilizers, pesticides, and herbicides. Runoff quality from the site would likely improve with the elimination of the parking lot, and development of the Fulton Street Mall. The general drainage pattern of the site would not be altered; site runoff would drain into the City's combined sanitary and storm sewer system.

Local lore refers to an "underground stream" in the Civic Center area. At one time, groundwater that infiltrated the Hayes Valley area of San Francisco may have been concentrated into two subsurface drainages which passed through the project vicinity (these may have been surface drainages that were progressively filled with dune sand

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

through natural processes and eventually covered by artificial fill)./1/ Since the urbanization of the Hayes Valley area and the collection and routing of storm water to San Francisco's combined storm and sanitary sewer system, most of the infiltration that supplied those localized groundwater flows has been cut off, and this localized concentration of groundwater has likely ceased.

Based on groundwater measurements made for the geotechnical report for the project, groundwater at the site currently occurs at about 23 to 30 feet San Francisco datum./2,3/ Those measurements were made in Fall 1990, after a prolonged dry period; groundwater levels are likely to be higher during the wet season and non-drought conditions. The floor of the lower basement of the new Main Library would be about 26 feet San Francisco datum. Thus, excavation required for the project would extend below the water table.

Dewatering would be required for excavation. A slurry wall around the excavation area is proposed to minimize the amount of dewatering required. Dewatering could cause some settlement of adjacent or nearby structures. The project includes measures to mitigate this potential impact. A mitigation measure that would reduce the amount of sediment in the water removed from the excavation before discharge into the City's combined storm and sanitary sewer system is included in the project (see p. 34).

After construction, seepage could occur and sump pumps could be required to keep the basement dry (as is the case at City Hall, Opera House, and the Veterans' Building). Because most of the site is already covered by impervious surfaces, groundwater recharge would not be affected by the project.

No further analysis of water resources is required in the EIR.

NOTES - Water

/1/ Forbes, Hyde, Consulting Engineering Geologist, Investigation of Ground and Water Conditions, Proposed Exhibit Hall Site, Civic Center, 1954.

/2/ Geo/Resource Consultants, Progress Report Number 1, San Francisco New Main Library, November 12, 1990.

/3/ San Francisco City Datum establishes the City's zero point for surveying purposes at approximately 8.6 feet above mean sea level.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

11) Energy/Natural Resources. Could the project:	Yes	No	Discussed
*(a) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use them in a wasteful manner?	X		X
(b) Have a substantial effect on the potential use, extraction, or depletion of a natural resource?		X	X

The existing Main Library is heated by a steam boiler in the City Steam Plant at Larkin and McAllister Streets, part of the Civic Center steam loop system that serves public buildings in the area. The plant has two three-phase, 208-volt motors that pump water into the boilers; these were converted from DC to AC operations about 18 months ago. On a proportional basis approximately 14 percent of the energy produced by the steam plant is consumed by the existing library. The City office buildings at 45 Hyde Street and 100 Larkin Street are not served by the steam plant.

Electricity is made available by the City and County of San Francisco Public Utilities Commission through its Hetch Hetchy Water and Power Division.

The Main Library and 45 Hyde Street building use approximately 27 billion Btu of energy per year, mostly for electricity and natural gas. Building operations at 100 Larkin Street currently consume approximately one billion Btu of energy per year at the source./1,2/

Removal of existing paved parking surfaces and building demolition would require consumption of an unknown amount of energy. Fabrication and transportation of building materials, worker transportation, site development, and building construction would require about 550 billion Btu of gasoline, diesel fuel, natural gas, and electricity./3/ Distributed over the estimated 50-year life of the project, construction-related energy use would be about 11 billion Btu per year, or about 19 percent of building operational energy requirements./4/

New buildings in San Francisco are required to conform to energy conservation standards specified by Title 24 of the *California Code of Regulations*. Documentation showing compliance with these standards is submitted with the application for the project's building permit. Title 24 standards are enforced by the Bureau of Building Inspection.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Energy use for the project would be more intensive than, for example, residential uses due to special conditioning needs. Energy use would be more intensive for the Asian Art Museum than for the existing library building due to new temperature controls and related air conditioning equipment for the museum collection. Total energy use for the existing library building, when converted to museum use, would increase due to these special requirements and due to the proposed expansion into the 45 Hyde Street space. The Asian Art Commission would work with the City Energy Conservation Office in development of final building plans to ensure that the museum would not use energy in a wasteful manner. Similarly, the new Main Library would have special conditioning requirements. The Library Commission would work with the Energy Conservation Office to ensure that the new Main Library would not use energy in a wasteful manner.

Table 1 shows the estimated operational energy that would be used by the new Main Library. Energy consumption at the Asian Art Museum with its proposed addition would be offset by the displacement of the existing library uses and the 45 Hyde Street and 100 Larkin Street office buildings, coupled with increased efficiency in energy use in both the new Main Library and remodeled museum. Thus, the total net increase of energy consumption for the entire project would be essentially the energy associated with the new Main Library itself. Figures 4 and 5 (pp. 27 and 28) show the annual and peak daily electricity and natural gas consumption for the proposed new Main Library. These estimates assume that the new Main Library building would be heated by natural gas and would not be connected to the Civic Center Steam Loop./5/

Peak demand for electricity for the new Main Library would occur in mid-afternoon in late summer and early autumn and would be about 1,700 kW, which is about 0.009 percent of PG&E's peak load of 18,000 megawatts (MW)./6/ Peak daily demand for natural gas at the new library building would occur on January mornings and would be about 82,000 cubic feet, about 0.002 percent of PG&E's peak day send-out of 3.4 billion cubic feet./6/

PG&E has indicated that project energy consumption resulting from development would not be significant and that conclusion remains valid for the future and project conditions./7/

Increased demand for electricity in San Francisco to the year 2000 would be met by PG&E from nuclear sources, oil and gas facilities, hydroelectric and geothermal facilities, and other sources such as cogeneration, wind and imports. PG&E plans to continue receiving most of its natural gas from Canada and Texas under long-term contracts.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

TABLE 1: ESTIMATED OPERATIONAL ENERGY USE AT NEW MAIN LIBRARY /a,e/

Daily Natural Gas Consumption/b,d/

Estimated natural gas consumption per sq. ft.	11 Btu/c/
Estimated total natural gas consumption	37 Therms

Monthly Electric Consumption/b,d/

Estimated electricity consumption per sq. ft.	0.86 kWh (8,800 Btu)/d/
Estimated total electricity consumption	460,000 kWh (4.7 billion Btu)

Annual Consumption/d/

Estimated total annual natural gas consumption	14,000 Therms (1.4 billion Btu)
Estimated total annual electricity consumption	5.5 million kWh (56 billion Btu)
Estimated total annual energy consumption	57 billion Btu (9,800 barrels of oil)

NOTES:

/a/ Energy use includes space conditioning, service water heating, and lighting in accordance with allowable limits under Title 24. Estimated electricity consumption is based on Title 24 estimates plus an additional three kWh/sq. ft.-yr., consumed by appliances such as typewriters, computers, coffee makers, etc.

/b/ Electricity and natural gas consumption was based on estimates provided by Flack + Kurtz, Consulting Engineers, letter, November 29, 1990). Calculations for the project are on file at the Department of City Planning, Office of Environmental Review, 450 McAllister St.

/c/ Btu (British thermal unit: a standard unit for measuring heat. Technically, it is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level.)

/d/ Energy Conversion Factors:

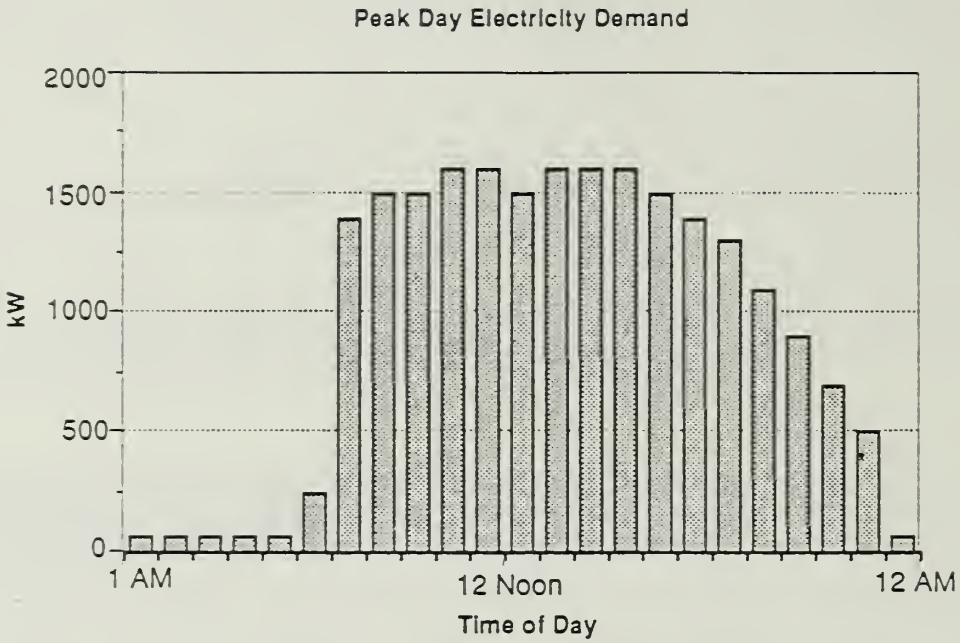
one gallon gasoline	=	125,000 Btu
one kilowatt hour (kWh)	=	10,239 Btu
one therm	=	100,000 Btu
one barrel oil	=	5,600,000 Btu

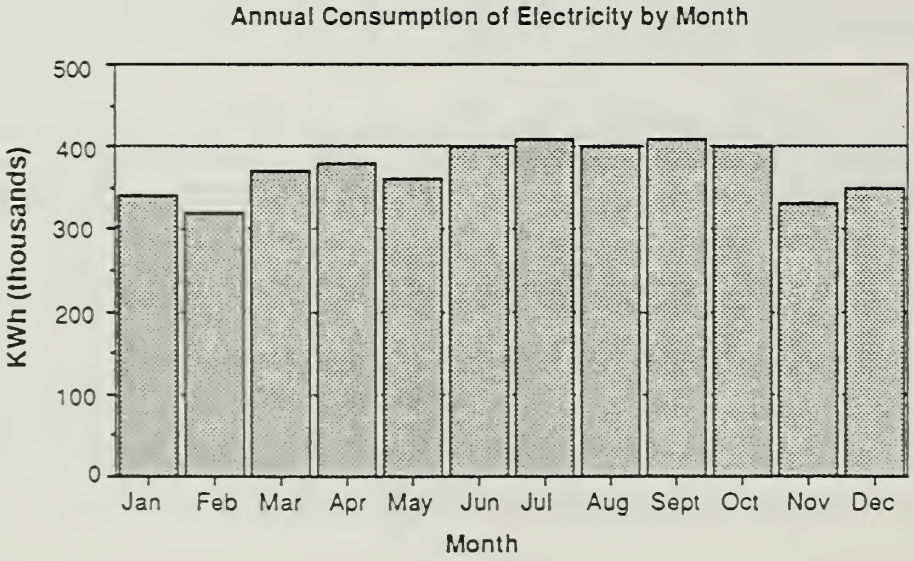
/e/ Monthly and annual figures may not match due to rounding to three significant digits.

SOURCE: Environmental Science Associates, Inc., and Department of City Planning.

Project-related transportation would cause additional, off-site energy consumption. Annual project-related trips (about 1.11 million auto vehicle trip ends [vte], 465,000 bus person trip ends [pte], 202,000 BART pte, and 814,000 Muni electric pte) would require about 350,000 gallons of gasoline and diesel fuel. and about 1.26 million kWh of electricity annually, as indicated in Table 2, p. 29.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

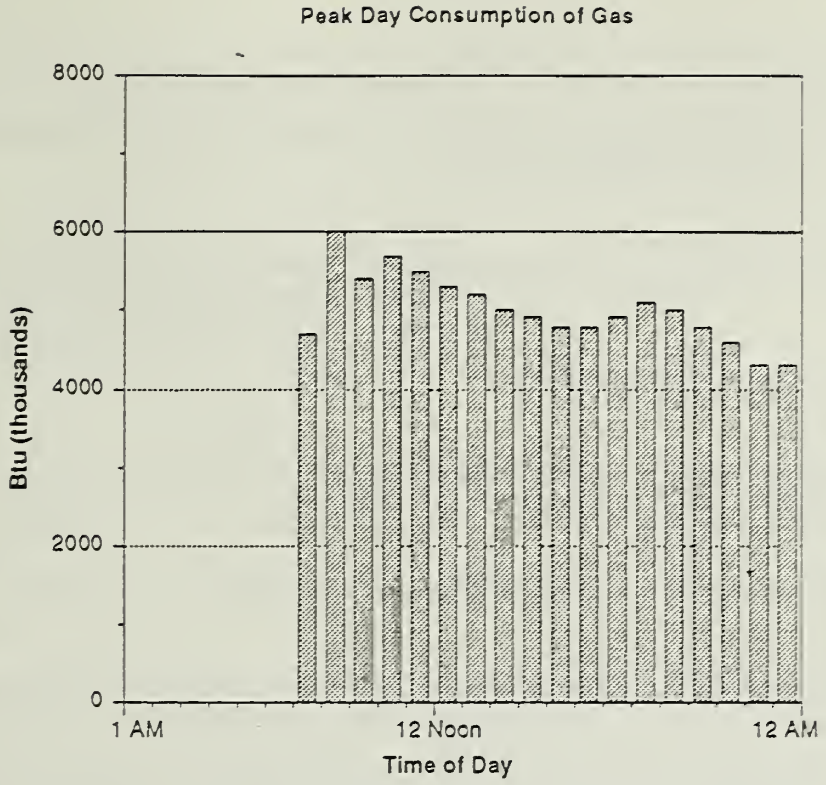


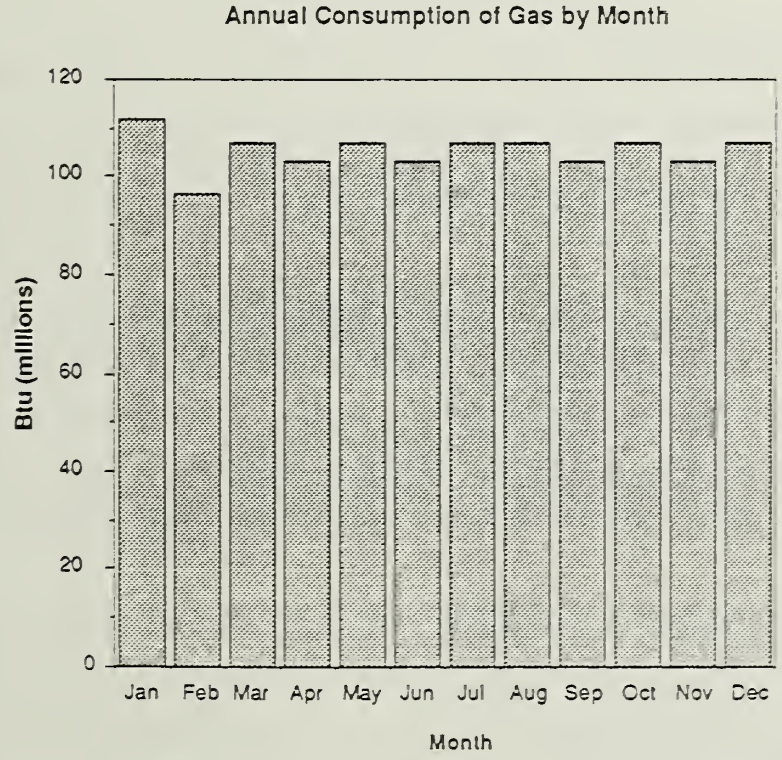


SF Main Library

SOURCE: Place & Kurtz;
Environmental Science Associates, Inc

Figure 4
Estimated Electricity Peak Day Demand
and Annual Consumption





SF Main Library

SOURCE: Flack & Kurtz;
Environmental Science Associates, Inc.

Figure 5
Estimated Gas Peak Day
Comsumption and Annual Gas
Load Distribution

TABLE 2: PROJECT-RELATED ANNUAL TRANSPORTATION ENERGY CONSUMPTION IN 2000/a/

	Electricity Thousands (of kWh)	Gasoline Thousands (of Gallons)	Diesel Thousands (of Gallons)	Total Btu (Billion)
Auto/Taxi/Jitney/Motorcycle/ Charter Bus	--	324.0	--	45.4
BART	409.5	---	--	4.2
Muni Electric	856.7	--	--	8.8
Regional Bus Systems/b/	--	--	26.4	4.2
Project Total	1266.2	324.0	26.4	62.5

/a/ The methods used to calculate these figures are described in detail in the *Downtown Plan EIR*, Case No. 81.3E, certified November 18, 1984, in Appendix N. The associated data is contained in Table 6 of that document. Calculations are also based, in part, on vehicle miles travelled (see calculations for the project on file at the Department of City Planning, Office of Environmental Review, 450 McAllister Street).

/b/ Includes MUNI diesel.

Figures may not match totals due to rounding.

SOURCE: Environmental Science Associates, Inc.

These figures are based on data contained in the Downtown Plan EIR. The total annual energy demand, converted with at-source factors to a common thermal energy unit, would be about 62.5 billion Btu, the energy equivalent of about 10,800 barrels of oil. The projected use is based upon the mix of highway vehicles in California in 1987. Vehicle fuel is expected to decrease as the vehicle fleet becomes more efficient and fuel more expensive.

This topic, energy consumption impacts, requires no further analysis and will not be discussed in the EIR.

NOTES - Energy/Natural Resources

/1/The British thermal unit (Btu) is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit at sea level; all references to Btu in this Initial Study are at-sources values. The term "at-source" means that adjustments have been made in the calculation of the thermal energy equivalent (Btu) for losses in energy that occur during generation, transmission, and distribution of the various energy forms as specified in:

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

ERCDC, 1977, *Energy Conservation Design Manual for New Non-Residential Buildings*, Energy Conservation and Development Commission, Sacramento, California, and Apostolos, J.A., W.R. Shoemaker, and E. C. Shirley, 1978 *Energy and Transportation System*, California Department of Transportation, Sacramento, California, Project #20-7, Task 8.

/2/ Existing energy consumption was determined from actual billings. In the case of space hearing for the existing Main Library, a percentage of the City steam plant's energy consumption was assigned to the library based on its proportionate size in relation to all buildings served by the steam plant.

/3/ Hannon, B., et al., 1978, "Energy and Labor in the Construction Sector," *Science* 202:837-847.

/4/ The estimated 50-year life of the project is considered an industry standard by engineers, architects, and planners. It does not imply that the new Main Library building would "last" only 50 years.

/5/ Arthur, Ronald, Senior Associate for Flack + Kurtz Consulting Engineers, letter dated November 12, 1990.

/6/ PG&E electrical and natural gas demand is from PG&E's *Pacific Gas and Electric Company 1989 Annual Report.*

/7/ Copies of memoranda of telephone conversations with service providers and service provider questionnaire responses are available for review at the Department of City Planning, Room 600, 450 McAllister Street, San Francisco.

12) Hazards. Could the project:	Yes	No	Discussed
*(a) Create a potential public health hazard or involve the use, production or disposal of materials which pose a hazard to people or animal or plant populations in the area affected?	___	X	X
*(b) Interfere with emergency response plans or emergency evacuation plans?	___	X	X
(c) Create a potentially substantial fire hazard?	___	X	X

The project would not create a potential public health hazard through the production or disposal of harmful materials.

The project would increase the daytime population in greater downtown San Francisco. Employees and patrons of the proposed new Main Library and relocated Asian Art Museum would contribute to congestion if an emergency evacuation of the Civic Center area were required. An evacuation and emergency response plan would be developed as part of the proposed project (see Mitigation on p. 34). The project's emergency plan would be coordinated with the City's emergency planning activities. These mitigation measures are proposed as part of the project, and this topic will not be addressed in the EIR.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The increased number of persons using the site would not substantially increase the fire hazard at the site as the project would be required to conform to the Life Safety provisions of the *San Francisco Building Code* and Title 24 of the *California Code of Regulations.* The project would replace two buildings and upgrade one building built prior to the enactment of these code requirements.

An asbestos survey has been performed for the existing Main Library and an asbestos abatement program is under way as part of a seismic upgrade of the building./1/ No formal asbestos surveys have been done for the two office buildings, although a survey of the 100 Larkin Street building is scheduled and should be complete by May 1991. The 100 Larkin Street building would be moved or demolished. The 45 Hyde Street building would be demolished. It is possible that asbestos-containing materials were used in these buildings, and are still present.

Any demolition of the existing buildings necessary for the project must comply with State law which requires, where there is asbestos-related work involving 100 square feet or more of asbestos-containing materials, that a contractor be certified and that certain procedures be followed./2/ The project sponsor would have the project contractor conform to state regulations for the removal of toxic materials in the existing structures. The Bay Area Air Quality Management District (BAAQMD) is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified ten days in advance of any proposed demolition. Notification includes the names, addresses and phone numbers of operations and persons responsible, including the contractor; description and location of the structure to be renovated/demolished including size, age and prior use, and the approximate amount of friable asbestos; scheduled starting and completion dates of renovation; nature of planned renovation and methods to be employed; procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used.

According to BAAQMD Regulation 11, Rule 2, if a structure is to be renovated, exposed asbestos must be sealed (encapsulated) or removed. Similarly, relocation of a building could upset existing asbestos-containing fibers, and removal must be completed prior to dismantling and moving the structure. Workers and the public could be exposed to asbestos fibers that become airborne during removal./3/ If legally required procedures were followed, exposure of workers and the public to asbestos would be within applicable safety standards.

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

The District randomly inspects removal operations. In addition, the District inspects any removal operations concerning which a complaint has been received.

The local office of the State Occupational Safety and Health Administration (OSHA) must also be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in 29 CFR 1926.58. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the properties where demolition and renovation would occur must have a Hazardous Waste Generator Number assigned by, and registered with, the California Department of Health Services in Sacramento. The contractor and the hauler of the material are required to file a Hazardous Waste Manifest which details the hauling of the material from the site and the disposal of the material. Issues related to asbestos do not require further analysis and will not be discussed in the EIR.

The EIR will include a discussion of the potential for encountering subsurface toxic materials during excavation.

NOTES - Hazards

/1/ Abel, Russell, Bureau of Architecture, San Francisco Department of Public Works, telephone conversation, February 12, 1991.

/2/ Assembly Bill 2040, Asbestos 1985, Added Section 24223 and Chapter 25 to Division 20 of the Health and Safety Code.

/3/ Bay Area Air Quality Management District, *Rules and Regulations*, Regulation 11, Rule 2, "Asbestos Demolition, Renovation and Manufacturing," adopted May 1981.

13) Cultural. Could the project:	Yes	No	Discussed
*(a) Disrupt or adversely affect a prehistoric or historic archaeological site or a property of historical or cultural significance to a community or ethnic or social group; or a paleontological site except as a part of a scientific study?	X	__	X
(b) Conflict with established recreational, educational, religious or scientific uses of the area?	__	X	X
(c) Conflict with the preservation of buildings subject to the provisions of Article 10 or Article 11 of the City Planning Code?	__	X	X

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

Buildings on the project site include the existing Main Library, assigned the highest rating of "5" in the Department of City Planning's 1976 citywide architectural inventory. Other buildings on the project site include City office buildings at 45 Hyde Street (on the Asian Art Museum block) and at 100 Larkin Street (on the New Library block). The Pioneer Monument sculpture is also on the New Library block. The Civic Center contains a number of architecturally important buildings; it is listed on the National Register of Historic Places as a district and is under consideration by the City as a potential historic district under Article 10 of the *City Planning Code*. There are four designated City landmarks within three blocks of the site: City Hall, the War Memorial complex, the Orpheum Theater building, and the former High School of Commerce, now headquarters of the San Francisco Unified School District. These buildings are designated Landmarks Nos. 21, 84, 94, and 140, respectively by Article 10 of the *City Planning Code*. Architectural resources in the project area will be discussed in the EIR.

Archival research was conducted regarding the possibility of encountering artifacts on the project site./1/ The EIR will discuss the possibility of encountering subsurface cultural resources.

NOTE - Cultural

/1/ An archaeological resources report titled "Archival Cultural Resources Evaluation of the Proposed Main Library Development Project and Two Affiliated Parcels in the Civic Center Plaza Area, San Francisco, California," was prepared for the proposed site by Allen G. Pastron, Ph.D. of Archeo-Tec, Inc., in November 1990 and is on file at the Office of Environmental Review, Department of City Planning, 450 McAllister Street, San Francisco.

C. OTHER	Yes	No	Discussed
Require approval and/or permits from City Departments other than Department of City Planning or Bureau of Building Inspection, or from Regional, State, or Federal Agencies?	__	X	__

D. MITIGATION MEASURES	Yes	No	N/A	Discussed
1) If any significant effects have been identified, are there ways to mitigate them?	X	__	__	X
2) Are all mitigation measures identified above included in the project?	X	__	__	X

The following are mitigation measures related to topics determined to require no further analysis in the EIR. The EIR will contain a mitigation chapter describing these measures and also including other measures which would be, or could be, adopted to reduce potential adverse effects of the project identified in the EIR.

Operational Noise

- As recommended by the Environmental Protection Element of the *San Francisco Master Plan*, an analysis of noise reduction measures would be prepared by the project sponsor and recommended noise insulation features would be included as part of the proposed building. For example, such design features could include fixed windows and climate control.

Construction Air Quality

- The project sponsor would require the contractor to sprinkle demolition sites with water regularly during demolition activity; sprinkle unpaved construction areas with water at least twice per day; cover stockpiles of soil, sand, and other material; cover trucks hauling debris, soils, sand or other such material; and sweep streets surrounding demolition and construction sites at least once per day to reduce particulate emissions. The project sponsor would require the project contractor to maintain and operate construction equipment so as to minimize exhaust emissions of particulates and other pollutants, by such means as a prohibition on idling of motors when equipment is not in use or when trucks are waiting in queues, and implementation of specific maintenance programs to reduce emissions for equipment that would be in frequent use for much of the construction period.

Water Quality

- The project sponsor would require the contractor to temporarily retain groundwater pumped from the excavation in a holding tank to allow suspended particles to settle and reduce the amount of sediment entering the storm drain/sewer lines.

Hazards

- In order to reduce potential injury to building occupants during an earthquake or other catastrophic emergency, an evacuation and emergency response plan would be developed by the project sponsor or building management staff, in consultation with the Mayor's Office or Emergency Services to ensure coordination between the City's emergency planning activities and the project's plan and to provide for building occupants in the event of an emergency. The project plan would be reviewed by the Office of Emergency Services and implemented by building management insofar as feasible before issuance by the Department of Public Works of final building permits.

- To expedite implementation of the City's emergency response plan, the project sponsor would prominently post information for building occupants concerning what to do in the event of a disaster.

E. ALTERNATIVES

Alternatives to the proposed project will be discussed in the EIR and will include the following:

A. No Project: The site would remain in its existing condition with the existing City office building and parking lot remaining. The Main Library would remain in its existing location, as would the Asian Art Museum.

B. Alternative Site: A new Main Library would be constructed at an alternative site, for example, within the Yerba Buena Center redevelopment area. The New Library block would remain in its existing condition, with the City office building and parking lot. The Asian Art Museum would be relocated to the existing Main Library building.

C. Expansion of Existing Library: The existing library building would be remodeled to accommodate the space needs of the Main Library. The New Library block would remain in its existing condition, with the City office building and parking lot. The Asian Art Museum would not be relocated from Golden Gate Park.

D. Library as Courts Facility: The new Main Library would be constructed as proposed. The existing Main Library building would be remodeled and converted to a court building. The Asian Art Museum would not be relocated from Golden Gate Park.

E. Expansion of Civic Center Garage: The new Main Library would be constructed as proposed. The existing Civic Center Garage beneath Civic Center Plaza would be expanded. The Asian Art Museum would be relocated to the existing Main Library building.

F. Pioneer Monument, No Change: The new Main Library would be constructed as proposed, except that the Pioneer Monument would not be moved and no auditorium would be included in the library. The Asian Art Museum would be relocated to the existing Main Library building.

These alternatives and their potential impacts will be discussed in the EIR.

F. MANDATORY FINDINGS OF SIGNIFICANCE	Yes	No	Discussed
*1) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plants or animal, or eliminate important examples of the major periods of California history or pre-history?		X	

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

*2) Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	__	X	__
*3) Does the project have possible environmental effects which are individually limited, but cumulatively considerable. (Analyze in the light of past projects, other current projects, and probable future projects.)	X	__	X
*4) Would the project cause substantial adverse affects on human beings, either directly or indirectly?	__	X	__

The project would contribute to cumulative impacts in San Francisco, primarily in the areas of transportation and air quality. Applicable cumulative impacts will be discussed in the EIR.

G. ON THE BASIS OF THIS INITIAL STUDY

___ I find that proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared by the Department of City Planning.

___ I find that although the proposed project could have a significant effect on the environment, there WILL NOT be a significant effect in this case because the mitigation measures, numbers ____ , in the discussion have been included as part of the proposed project. A NEGATIVE DECLARATION will be prepared.

__X__ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

Diane Oshima for

BARBARA W. SAHM
Environmental Review Officer
for

DEAN L. MACRIS
Director of Planning

DATE: April 11, 1991

*Derived from State EIR Guidelines, Appendix G, normally significant effect.

APPENDIX B: ARCHITECTURAL RESOURCES

The architectural ratings discussed in the text of this report represent the results of three separate architectural evaluation surveys: the 1976 San Francisco Department of City Planning Citywide Architectural Survey, the Heritage Survey, and the Downtown Plan survey. These are discussed below.

SAN FRANCISCO DEPARTMENT OF CITY PLANNING CITYWIDE ARCHITECTURAL SURVEY

Between 1974 and 1976, the San Francisco Department of City Planning conducted a citywide inventory of architecturally significant buildings. An advisory review committee of architects and architectural historians assisted in the final determination of ratings for the 10,000 buildings, the results of which were entered in an unpublished 60-volume record of the inventory. The rated buildings are also represented on a set of color-coded maps which identify the location and relative significance of each building surveyed. The inventory and maps are on file at the Department of City Planning.

The inventory assessed the architectural significance of the surveyed structures from the standpoint of overall design and particular design features. Both contemporary and older buildings were included, but historical associations were not considered. Each building was given two numerical ratings, one for architectural quality and one for overall architectural significance, urban design context, and environment significance. The latter rating is referred to in this report. The ratings ranged from a low of "0" to a high of "5." The architectural survey resulted in a listing of the best ten percent of San Francisco's buildings. In the estimation of the inventory participants, buildings rated "3" or higher represent approximately the best two percent of the City's architecture.

HERITAGE SURVEY

The Foundation for San Francisco's Architectural Heritage, through its consultants, Charles Hall Page & Associates, Inc., conducted an architectural and historical survey of all downtown structures. In 1979, the original inventory results were published in the book *Splendid Survivors* (Foundation for San Francisco's Architectural Heritage,

Splendid Survivors, California Living Books, San Francisco 1979). A subsequent 1982 Heritage survey evaluated all structures in the C-3 zoning districts in areas not covered in the *Splendid Survivors* survey ("San Francisco Downtown Architectural Survey: C-3 Zoning District, Final Evaluated List," December 1, 1982). The expanded inventory has not been formally published by Heritage. Criteria considered in rating the buildings for both surveys include Architectural Significance, Historic Context and Negative Alterations. Summary ratings from "A" to "D" were assigned to each building on the basis of these scores. The summary ratings, as described on pp. 12-13 of *Splendid Survivors*, are listed below:

A. Highest Importance. Individually the most important buildings in downtown San Francisco, distinguished by outstanding qualities of architecture, historical values, and relationship to the environment. All A-group buildings are eligible for the National Register, and of highest priority for City Landmark status.

B. Major Importance. Buildings which are of individual importance by virtue of architectural, historical, and environmental criteria. These buildings tend to stand out for their overall quality rather than for any particular outstanding characteristics. B-group buildings are eligible for the National Register, and of secondary priority for City Landmark status.

The Landmarks Preservation Advisory Board does not distinguish between "A" rated and "B" rated buildings for purposes of preservation.

C. Contextual Importance. Buildings which are distinguished by their scale, materials, compositional treatment, cornice and other features. They provide the setting for more important buildings and they add visual richness and character to the downtown area. Many C-group buildings may be eligible for the National Register as part of historic districts.

D. Minor or No Importance. Buildings which are insignificant examples of architecture by virtue of original design, or more frequently, insensitive remodeling. This category includes vacant buildings and parking lots. Most D-group buildings are sites of opportunity.

Not Rated. Buildings which have been built or suffered insensitive exterior remodelings since 1945.

DOWNTOWN PLAN SURVEY

The City Planning Commission adopted by Resolution No. 8600 (May 29, 1980), a "List of Architecturally and/or Historically Significant Buildings in the Downtown," based on the above described surveys. Generally, buildings rated "3" or higher in the DCP survey or "A" or "B" in the original Heritage survey (*Splendid Survivors*) were

placed on the list. The expanded Heritage survey (1982) has not been adopted by the City Planning Commission to date.

The purpose of the list is to advise developers and building owners of the importance the City places upon the buildings' conservation and to require special review by the Commission of any plans which would affect any building or buildings on the list. Resolution No. 9240 (November 19, 1981) reaffirms the Commission's concern for preservation of architecturally significant buildings and acknowledges the Director's intent to recommend denial of projects that propose to demolish significant buildings.

The Downtown Plan establishes four categories of architecturally important structures. The Plan states (p. 66) "This Plan proposes a preservation strategy that would require that 268 buildings (called significant buildings in this Plan) be retained, while providing incentives to encourage the retention of 183 other important, but less significant buildings (called contributory buildings.) They are shown on Map 12 in the Plan. Both classes of buildings would be entitled to 'Transferable Development Rights.'" The following material, taken from the Plan, describes the categories and briefly identifies preservation strategies.

Significant Buildings

Those buildings of the highest architectural and environmental importance -- buildings whose demolition would constitute an irreplaceable loss to the quality and character of downtown -- would be required to be retained. There are 268 of these buildings. They include all buildings rated by Heritage as excellent in either architectural quality or relationship to the environment, or very good in both. (This covers all buildings rated "A" by Heritage and most of the buildings rated "B".)

These buildings -- referred to in the Plan as significant buildings -- are divided into Category I and Category II, the difference being in the extent of alteration allowed. There are 226 significant buildings in Category I ([listed]) in Table 4 [of the Plan] and 42 significant buildings in Category II.

Contributory Buildings

The Downtown Plan proposes to encourage, but not require, retention of other buildings contributing to the quality and character of downtown. These buildings, called contributory buildings, consist of two groups:

Category III

- Buildings rated very good in architectural quality, but lower than very good in relationship to the environment, or vice versa, and located outside conservation districts. (These buildings were rated "B" by Heritage.) There are 21 of these buildings. They are listed on Table 6 [of the Plan].

Category IV

- Buildings rated very good in architectural quality, but lower than very good in relationship to the environment or vice versa and which are located in a Conservation District. (These buildings were rated "B" by Heritage.) There are 15 of them.

- Buildings with "contextual value" to a conservation district. These contextual buildings are buildings that themselves are not highly rated in architectural quality and relationship to the environment, but do make a substantial contribution to the "quality" of an area that contains a number of highly-rated buildings and that is proposed to be given special protection as a conservation district. (These buildings were rated "C" by Heritage.) The 166 Category IV buildings are listed in Table 7 [of the Plan.]

Six conservation districts are established by the Plan:

District 1: Kearny-Market-Mason-Sutter Conservation District

District 2: New Montgomery-Second Street Conservation District

District 3: Commercial-Leidesdorff Conservation District

District 4: Front-California Conservation District

District 5: Kearny-Belden Conservation District

District 6: Pine-Sansome Conservation District

APPENDIX C: WIND STUDY METHODOLOGY

This summary of wind study methodology is based on a report by Bruce R. White, Ph.D., Professor of Mechanical Engineering at the University of California, Davis. The study is independent of the University. The report is available for review at the Department of City Planning, Office of Environmental Review, 450 McAllister Street.

INTRODUCTION

The comfort of pedestrians varies under different conditions of sun exposure, temperature, clothing, and wind speed. Winds up to four miles per hour (mph) have no noticeable effect on pedestrian comfort. With winds from four to eight mph, wind is felt on the face. Winds from eight to thirteen mph will disturb hair, cause clothing to flap, and extend a light flag mounted on a pole. Winds from 13 to 19 mph will raise loose paper, dust and dry soil, and will disarrange hair. For winds from 19 to 26 mph, the force of the wind will be felt on the body. With 26 to 34 mph winds, umbrellas are used with difficulty, hair is blown straight, there is difficulty in walking steadily, and wind noise is unpleasant. Winds over 34 mph increase difficulty with balance and gusts can blow people over./1/

The City Planning Code Section 148, Reduction of Ground-Level Wind Currents in C-3 (Downtown Commercial) Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10% of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. Similarly, the Code requires that buildings not cause equivalent wind speeds to reach or exceed the hazard level of 26 mph for a single full hour of the year, or 0.011416% of the time. The comfort criteria are based on wind speeds that are measured for one minute and averaged. In contrast, the hazard criterion is based on winds that are measured for one hour and averaged; when stated on the same basis as the comfort criteria winds, the hazard criterion speed is a one-minute average of 36 mph. The wind ordinance is defined in terms of equivalent wind speed./2/ This term denotes an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence.

The project site is located in a Public Use (P) District, in which the City Planning Code wind requirements do not apply. For the purposes of this analysis, the project

will be examined in relation to the criteria established for the Downtown Commercial (C-3) District.

METHODOLOGY AND ASSUMPTIONS

A one inch = 50 feet scale model of the area surrounding the proposed building for several blocks in all directions was provided by ESA. Wind-tunnel tests were conducted: for the project setting in its existing condition (including all approved development); for the project in the existing setting; and for the project and potential development in the existing setting.

The model was tested in a wind tunnel that allows testing of natural atmospheric boundary layer flow past surface objects such as buildings and other structures. The tunnel has an overall length of 22 meters (m) (72 feet), a test section of 1.22 m (4 feet) wide by 1.83 m (6 feet) high, and an adjustable false ceiling. The adjustable ceiling and turbulence generators allow speeds within the tunnel to vary from one to eight meters per second (m/s), or 2.2 to 17.9 mph.

Wind-speed measurements were made with a hot-wire anemometer, an instrument that directly relates rates of heat transfer to wind speeds by electronic signals. The hot-wire signals are proportional to the magnitude and steadiness of the wind. By measuring both the mean wind speeds and corresponding turbulence intensities, high wind speeds and gustiness (changes in wind speeds over short periods of time) could be detected. The ratio of near-surface speed to reference wind speed was calculated from the hot-wire measurements. The inherent uncertainty of measurements made with the hot-wire anemometer close to the surface of the model is plus or minus five percent of the true values.

The mean wind speeds at street level were determined by relating the wind-tunnel results with statistically representative records of San Francisco wind data. Data describing the speed, direction, and frequency of occurrence of winds were gathered at the old San Francisco Federal Building at 50 United Nations Plaza (at a height of 132 ft.) during the six-year period, 1945 to 1950. Measurements taken hourly and averaged over one-minute periods have been tabulated for each month (averaged over the six years) in three-hour periods using seven classes of wind speed and 16 compass directions. Analysis of these data shows that during the hours from 6:00 a.m. to 8:00 p.m., about 70 percent of all winds blow from five of the 16 directions, as follows:

Northwest (NW), 10 percent; West Northwest (WNW), 14 percent; West (W), 35 percent; West Southwest (WSW), 2 percent; Southwest (SW), 9 percent; and all other winds, 28 percent. Calm conditions occur two percent of the time. More than 90% of measured winds over 13 mph blow from the NW, WNW, W, WSW, or SW.

Each wind-tunnel measurement results in a ratio that relates the speed of ground-level wind to the speed at the reference elevation, in this case the height of the Old San Francisco Federal Building. The frequency with which a particular wind velocity is exceeded at any test location is then calculated by using the measured wind-tunnel ratio and a specified ground speed to determine the corresponding reference wind speed for each direction. In general, this gives different reference speeds for each major directional component (NW, WNW, W, SW, and Other). The wind data for San Francisco are then used to calculate the percentage of the time that the specific ground-level wind speed is exceeded for each directional component. The sum of these is the total percentage of time that the specified ground-level wind speed is exceeded. A computer is used to calculate the total percentages for a series of wind speeds until the speed exceeded ten percent of the time is found, for each location point.

The mean wind speeds are compared to the comfort criteria of 11 mph for pedestrian areas and seven mph for seating areas, each not to be exceeded more than ten percent of the time. Separate calculations evaluate compliance with the hazard criterion. The wind data observed at the Old San Francisco Federal Building are not full hour average speeds as specified by the Code, so it is necessary to adjust the equivalent speeds to obtain the hourly average of 26 mph./3/ The adjusted equivalent wind speeds are used to calculate compliance with the hazard criterion.

STUDY RESULTS

Forty-three test locations were studied for the three configurations for four prevailing wind directions: northwesterly, west-northwesterly, westerly, and southwesterly (west-southwesterly winds are accounted for in the analysis of southwesterly winds). These wind conditions are the most common in San Francisco, and are therefore the most representative for evaluation of the proposed building. All hot-wire measurements were taken at the same series of surface points around the building site for all test configurations and wind directions included in testing.

Twelve of the 43 test locations correspond to representative outdoor seating locations: five locations in or near Civic Center Plaza (test locations 10-12, 16, and 17); five locations in United Nations Plaza (test locations 8, 9, 15, 21, and 22); and two locations (13 and 14) on Fulton Street between Hyde and Larkin Streets (the site of the proposed Fulton Street Mall).

Previous wind-tunnel testing and anecdotal information on wind conditions have indicated that high wind speeds occur along Market Street near the Civic Center. The analysis for this report modeled two sidewalk wind speed locations at the south side of the Fox Plaza tower near Polk Street, and one location at the northeast corner of Fox Plaza, on the sidewalk at Market and Hayes Streets.

The locations of the measurement points and the result of the wind-tunnel study for compliance with the comfort criteria are summarized in Figure C-1 and Table C-1, pp. A.48 and A.49. Throughout the following discussion the wind speeds reported refer to the equivalent wind speeds that would be exceeded 10% of the time, and about 0.01% of the time when referring to the hazard criterion.

Existing

The existing setting is considered windy with every one of the 12 measured seating location exceeding the 7-mph outdoor seating criterion, and 29 of the total 43 test locations exceeding the 11-mph pedestrian-comfort criterion, including nine of the 12 that exceeded the 7-mph criterion. Wind speeds in the Civic Center Plaza, United Nations Plaza, and proposed Fulton Street Mall range from 8 to 17 mph, while wind speeds in pedestrian areas range from 7 to 21 mph. At test locations near the south side of Fox Plaza (test locations 41 and 42), wind speeds range from 15 to 21 mph and exceed 26 mph for more than one hour per year. The sidewalk location (test location 38) at the Hayes and Market Streets intersection also exceeds 26 mph for more than one hour per year. Wind speeds at the Eighth and Market Streets intersection range from 10 to 17 mph. Generally, existing wind speeds around the perimeter of the New Main Library site, occupied by only a small existing structure (the City office building at 100 Larkin Street), range from 7 to 16 mph.

Project Effects

The project wind environment would be about the same or slightly improved over that of the existing setting, with wind speeds generally changing by one to two mph. There would be two new exceedences of the 11-mph pedestrian criterion and one increase of 4 mph. These exceedences would occur: i) in the United Nations Plaza at the southeast corner of the Old Federal Building (test location 9, increasing from 11 to 12 mph); ii) at the northeast corner of the Civic Auditorium (test location 33, increasing from 11 to 13 mph); and iii) at the northeast corner of the New Main Library (test location 20, increasing from 13 to 17 mph).

As compared with the existing setting, wind speeds would decrease at 17 locations, increase at 8 locations, and remain the same at 18 locations. Winds in the seating areas of Civic Center Plaza, United Nations Plaza, and the proposed Fulton Street Mall would continue to exceed the 7-mph seating criterion; however, the percentage time exceeded would decrease at 10 of the 12 representative seating locations. Wind speeds in the pedestrian areas would range from 6 to 21 mph, compared to 7 to 21 mph with existing conditions. At the two Fox Plaza locations at Market and Polk Streets, wind speeds would range from 17 to 21 mph, and would continue to exceed 26 mph for more than one hour per year. The sidewalk location at the Hayes and Market Streets intersection would continue to exceed 26 mph for more than one hour per year.

Generally, wind speeds around the perimeter of the proposed New Main Library site would range from 9 to 17 mph, with two locations on Grove Street that would decrease to meet the 11-mph pedestrian criterion. Also, three other locations to the east of the New Main Library site along Hyde Street would decrease to meet the 11-mph criterion. Wind speeds at the Eighth and Market Streets intersection would range from 6 to 16 mph, thus improving slightly as compared to the existing setting.

Overall, 26 of the total 43 locations included in the wind-tunnel test (three fewer than in the existing setting) would experience winds exceeding the 11-mph pedestrian-comfort criterion. The project would not cause any new exceedences of the hazard criterion.

Project plus Potential Development

This test scenario considered the project in the context of potential future development to the north and northwest of the project site. Approximate maximum building envelopes of proposed or potential development at 450 McAllister, 600 and 650 Van Ness, and on the block bounded by Golden Gate, McAllister, Larkin, and Hyde Streets were included in this scenario.

For this analysis, the following conservative assumptions were made about proposed and planned development in the immediate area. The City office building at 450 McAllister Street would be a 70-foot tall structure occupying a parcel bounded by McAllister Street, Polk Street, Redwood Alley, and an existing apartment building on Van Ness Avenue. The 600 Van Ness Avenue project would be 130 feet tall, except that the Van Ness Avenue frontage would be 50 feet tall, with a 20-foot setback to the 130-foot height. The building would cover about 50 percent of the half-block bounded by Golden Gate Avenue, Van Ness Avenue, Polk Street, and Elm Street. The 650 Van Ness Avenue development would also be 130 feet tall, with a 40-foot tall Van Ness Avenue parapet line and a 50-foot setback. It would cover the half-block bounded by Van Ness Avenue, Turk Street, Polk Street, and Elm Street, with the exception of the southeast corner of Van Ness and Turk and the state office building site at 525 Golden Gate Avenue. The Hastings development would be the same height as the existing Hastings building at 200 McAllister Street (about 80 feet) and would cover the entire block bounded by Hyde, McAllister, and Larkin Streets and Golden Gate Avenue, except the existing 200 McAllister building, the existing Abigail Hotel at 246 McAllister Street, and the City steam plant at McAllister and Larkin Streets. (Assumptions regarding the uses contained in the planned Hastings development were those made for the cumulative parking demand calculations.

The wind environment of the project plus potential development would be very similar to that of the project, with wind speeds increasing or decreasing by no more than one to two mph from speeds measured for the project. Compared with the existing setting, wind speeds would decrease at 22 locations, increase at 9 locations, and remain the same at 12 locations. Winds at 11 of the 12 seating area locations in Civic Center Plaza, United Nations Plaza, and the proposed Fulton Street Mall would continue to exceed the 7-mph seating criterion; one location at the entrance to City Hall would decrease from 8 to 7 mph thus meeting the 7-mph seating criterion. The percentage of time the criterion was exceeded would decrease at six of the remaining

11 sites, would remain the same at three sites, and would increase at two sites. Wind speeds in the pedestrian areas would continue to range from 6 to 21 mph.

At the two Fox Plaza locations at Market and Polk Streets, wind speeds would range from 18 to 21 mph, and would continue to exceed 26 mph for more than one hour per year. The sidewalk location at the Hayes and Market Streets intersection would continue to exceed 26 mph for more than one hour per year.

Overall, 25 of the total 43 locations included in this scenario would experience winds exceeding the 11-mph pedestrian-comfort criterion (four fewer than in the existing setting). No new exceedences of the hazard criterion would occur for this scenario.

SUMMARY

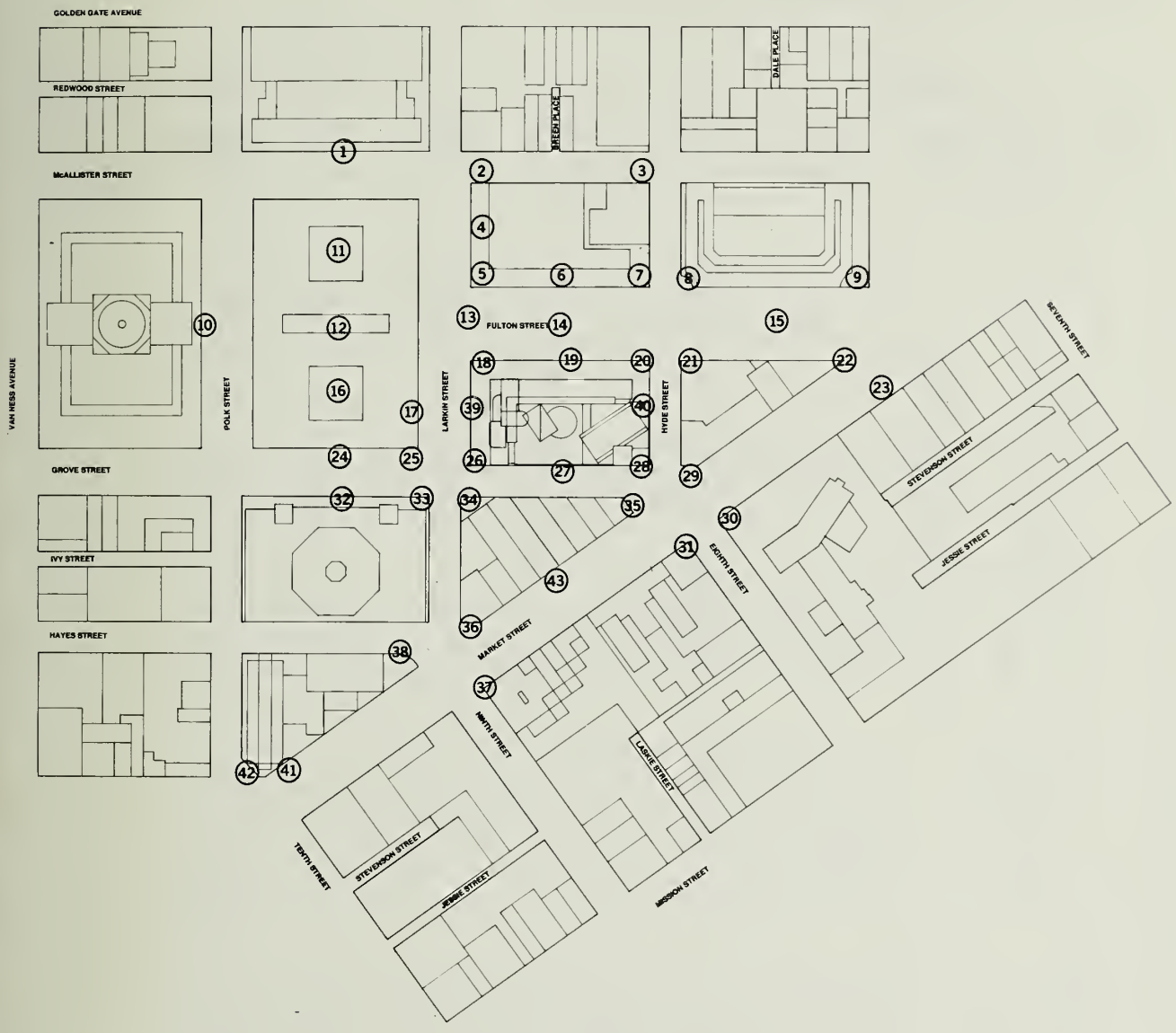
In summary, of the 43 locations tested in the wind-tunnel study, there are 29 locations where the pedestrian criterion is exceeded under existing conditions. With the project, there would be 26 locations at which the pedestrian criterion would be exceeded. With the project in the cumulative development scenario, there would be 25 locations where the pedestrian criterion would be exceeded. In all scenarios tested, winds at three locations exceed the hazard criterion by reaching 26-mph for one or more hours per year. The project would not create any new exceedences of the hazard criterion.

NOTES - Wind Study Methodology

/1/ Lawson, T.V. and A.D. Penwarden, "The Effects of Wind on People in the Vicinity of Buildings," Proceedings of the Fourth International Conference on Wind Effects on Buildings and Structures, London, 1975, Cambridge University Press, Cambridge, U.K., 605-622 1976.

/2/ Equivalent mean wind speed is defined as the mean wind, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45.

/3/ Arens, E., "Designing for Acceptable Wind Environment," Transactions Engineering Journal, ASCE 107, No. TE 2, p. 127-141, 1981.



Note: Wind speed measurements at these test locations are shown in Table C-1 on page A-49.

0 400
Feet

SOURCE: Environmental Science Associates, Inc.

SF Main Library ■

Figure C-1
Locations of Wind Speed Measurements

TABLE C-1: WIND SPEED MEASUREMENTS/a/

Location	Existing Setting				Project				Project plus Potential Development			
	10% Exc. Speed (mph)	% Time Exceeded: 11-mph Criterion	% Time Exceeded: 7-mph Criterion	Hazard Exceedence (hours/year)	10% Exc. Speed (mph)	% Time Exceeded: 11-mph Criterion	% Time Exceeded: 7-mph Criterion	Hazard Exceedence (hours/year)	10% Exc. Speed (mph)	% Time Exceeded: 11-mph Criterion	% Time Exceeded: 7-mph Criterion	Hazard Exceedence (hours/year)
1	12	3%			12	3%			12	3%		
2	10				10				10			
3	12	1%			12	2%			11			
4	9				9				9			
5	16	18%			15	17%			14	6%		
6	9				11				9			
7	12	4%			12	2%			11			
8	12	6%	32%		11		26%		13	6%	32%	
9	11		23%		12	3%	26%		12	2%	27%	
10	8		8%		8		6%		7			
11	14	13%	38%		16	16%	39%		16	16%	39%	
12	11		32%		11		30%		12	2%	32%	
13	15	15%	42%		13	10%	39%		13	10%	39%	
14	17	24%	47%		16	18%	41%		16	17%	40%	
15	15	14%	38%		15	12%	37%		15	14%	37%	
16	13	10%	40%		12	7%	37%		13	10%	40%	
17	15	18%	46%		13	9%	39%		13	8%	38%	
18	13	10%			13	7%			13	5%		
19	16	18%			14	10%			14	9%		
20	13	8%			17	20%			17	21%		
21	13	8%	34%		11		22%		11		25%	
22	13	8%	33%		13	6%	30%		13	8%	32%	
23	11				11				10			
24	12	5%			12	7%			11			
25	14	12%			13	6%			13	9%		
26	16	19%			15	13%			15	14%		
27	14	12%			9				10			
28	13	9%			9				9			
29	17	23%			11				11			
30	17	24%			16	16%			16	17%		
31	16	20%			16	18%			16	19%		
32	9				10				10			
33	11				13	7%			12	4%		
34	10				10				9			
35	10				6				6			
36	13	8%			12	5%			12	2%		
37	13	7%			13	9%			13	9%		
38	15	7%		25	14	2%		21	14	7%		9
39	7				9				9			
40	9				9				8			
41	15	19%		1	17	24%		1	18	27%		1
42	21	30%		36	21	30%		22	21	31%		122
43	10				10				10			

/a/ Locations of wind speed measurements are shown on Figure C-1 on p. A.48.

SOURCE: Environmental Science Associates, Inc.

APPENDIX D: TRANSPORTATION

TABLE D-1: PASSENGER LEVELS OF SERVICE ON BUS TRANSIT

Level of Service	Description	Passengers per Seat
A	Level of Service A describes a condition of excellent passenger comfort. Passenger loadings are low with fewer than half the seats filled. There is little or no restriction on passenger maneuverability. Passenger loading times do not affect scheduled operation.	0.00-0.50
B	Level of Service B is in the range of passenger comfort with moderate passenger loadings. Passengers still have reasonable freedom of movement on the transit vehicle. Passenger loading times do not affect scheduled operations.	0.51-0.75
C	Level of Service C is still in the zone of passenger comfort, but loadings approach seated capacity and passenger maneuverability on the transit vehicle is beginning to be restricted. Relatively satisfactory operating schedules are still obtained as passenger loading times are not excessive.	0.76-1.00
D	Level of Service D approaches uncomfortable passenger conditions with tolerable numbers of standees. Passengers have restricted freedom to move about on the transit vehicle. Conditions can be tolerated for short periods of time. Passenger loadings begin to affect schedule adherence, as the restricted freedom of movement for passengers requires longer loading times.	1.01-1.25
E	Level of Service E passenger loadings approach manufacturers' recommended maximums and passenger comfort is at low levels. Freedom to move about is substantially diminished. Passenger loading times increase as mobility of passengers on the transit vehicle decreases. Scheduled operation is difficult to maintain at this level. Bunching of buses tends to occur, which can rapidly cause operations to deteriorate.	1.26-1.50
F	Level of Service F describes crush loadings. Passenger comfort and maneuverability are extremely poor. Crush loadings lead to deterioration of scheduled operations through substantially increased loading times.	1.51-1.60

SOURCE: Environmental Science Associates, Inc. from information in the *Interim Materials on Highway Capacity*, Transportation Research Circular 212, pp. 73-113, Transportation Research Board, 1980.

INBOUND N-JUDAH – Duboce and Church
8:30 am, Wednesday, March 21, 1990

OUTBOUND N-JUDAH – Van Ness Station
5:30 pm, Tuesday, March 20, 1990

INBOUND 38L-GEARY– Van Ness and O'Farrell
8:35 am, Thursday, March 22, 1990

OUTBOUND L-TARAVAL – Van Ness Station
5:35 pm, Tuesday, March 20, 1990

SOURCE : Environmental Science Associates, Inc.

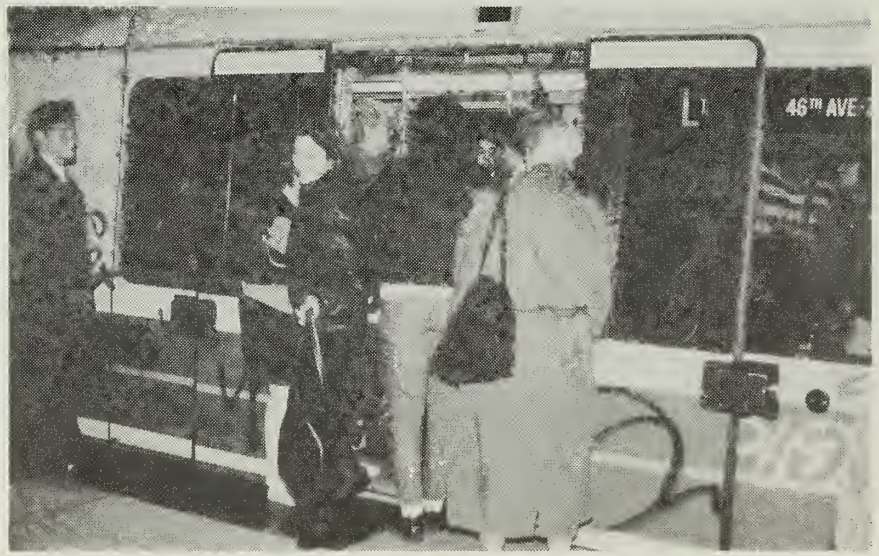
Figure D-1
Photos of Muni Peak Loading Conditions

SF Main Library ■

INBOUND **M-OCEANVIEW** – Civic Center Station
7:45 am, Thursday, March 29, 1990

OUTBOUND **J-CHURCH** – Van Ness Station
5:20 pm, Thursday, March 29, 1990

INBOUND **K-INGLESIDE** – Civic Center Station
7:55 am, Thursday, March 29, 1990



OUTBOUND **L-TARAVAL** – Van Ness Station
5:45 pm, Thursday, March 29, 1990

SOURCE : Environmental Science Associates, Inc.

Figure D-1 (continued)
Photos of Muni Peak Loading Conditions

SF Main Library ■

INBOUND **14-MISSION** – Mission and 24th Streets
7:35 am, Thursday, March 29, 1990

INBOUND **38L-GEARY** – O'Farrell and Van Ness
8:35 am, Thursday, March 29, 1990

SOURCE : Environmental Science Associates, Inc.

Figure D-1 (continued)
Photos of Muni Peak Loading Conditions

SF Main Library ■

INTERSECTION ANALYSIS

The capacity analysis of each intersection at which a turning movement count was made used the "critical lane" method. This method of capacity calculation is a summation of maximum conflicting approach lane volumes that gives the capacity of an intersection in vehicles per hour per lane. (This method is explained in detail in an article entitled "Intersection Capacity Measurement Through Critical Movement Summations: A Planning Tool," by Henry B. McInerney and Stephen G. Peterson, January 1971, *Traffic Engineering*. This method is also explained in "Interim Materials on Highway Capacity", *Transportation Research Circular No. 212*, Transportation Research Board, January 1980). The maximum service volume for Level of Service E was assumed as intersection capacity. A service volume is the maximum number of vehicles that can pass an intersection during a specified time period in which operating conditions are maintained corresponding to the selected and specified Level of Service (see Table D-2). For each intersection analyzed, the existing peak-hour volume was computed and a volume-to-capacity (v/c) ratio calculated by dividing the existing volume by the capacity at Level of Service E.

Levels of Service for unsignalized intersections are presented in Table D-3.

Intersections analyzed are shown in Figure D-2.

PEDESTRIAN ANALYSIS

Pedestrian levels of service were calculated using the Pushkarev and Zupan's *Urban Space for Pedestrians* (MIT Press, 1975). For pedestrian crosswalks, pedestrian flow rates, or the number of pedestrians passing a point per unit of time, are the basis for the flow regime designation. The flow rate is calculated using the width of the crosswalk and the number of pedestrians using the crosswalk per peak 15-minute period. Qualitatively, the flow regime indicates the "the freedom to choose desired speeds and to bypass others." Table D-4 shows the relationship between pedestrian flow rates and the flow regimes (categories) used to describe levels of operation. Figure D-3 shows photographs of pedestrian conditions that correspond to the flow regimes.

TABLE D-2: VEHICULAR LEVELS OF SERVICE AT SIGNALIZED INTERSECTIONS

Level of Service	Description	Volume/Capacity (v/c) Ratio/a/
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. No vehicles wait longer than one red traffic signal indication. The traffic operation can generally be described as excellent.	0.00-0.60
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully utilized and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.	0.61-0.70
C	Level of Service C describes a condition where the approach to an intersection is often fully utilized and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The driver occasionally may have to wait more than one red traffic signal indication. The traffic operation can generally be described as good.	0.71-0.80
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. However, there are enough signal cycles with lower demand such that queues are periodically cleared, thus preventing excessive back-ups. The traffic operation can generally be described as fair.	0.81-0.90
E	Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting upstream of the intersection and vehicles may be delayed up to several signal cycles. The traffic operation can generally be described as poor.	0.91-1.00
F	Level of Service F represents a jammed condition. Back-ups from locations downstream or on the cross street may restrict or prevent movement of vehicles out of the approach under consideration. Hence, volumes of vehicles passing through the intersection vary from signal cycle to signal cycle. Because of the jammed condition, this volume would be less than capacity.	1.01+

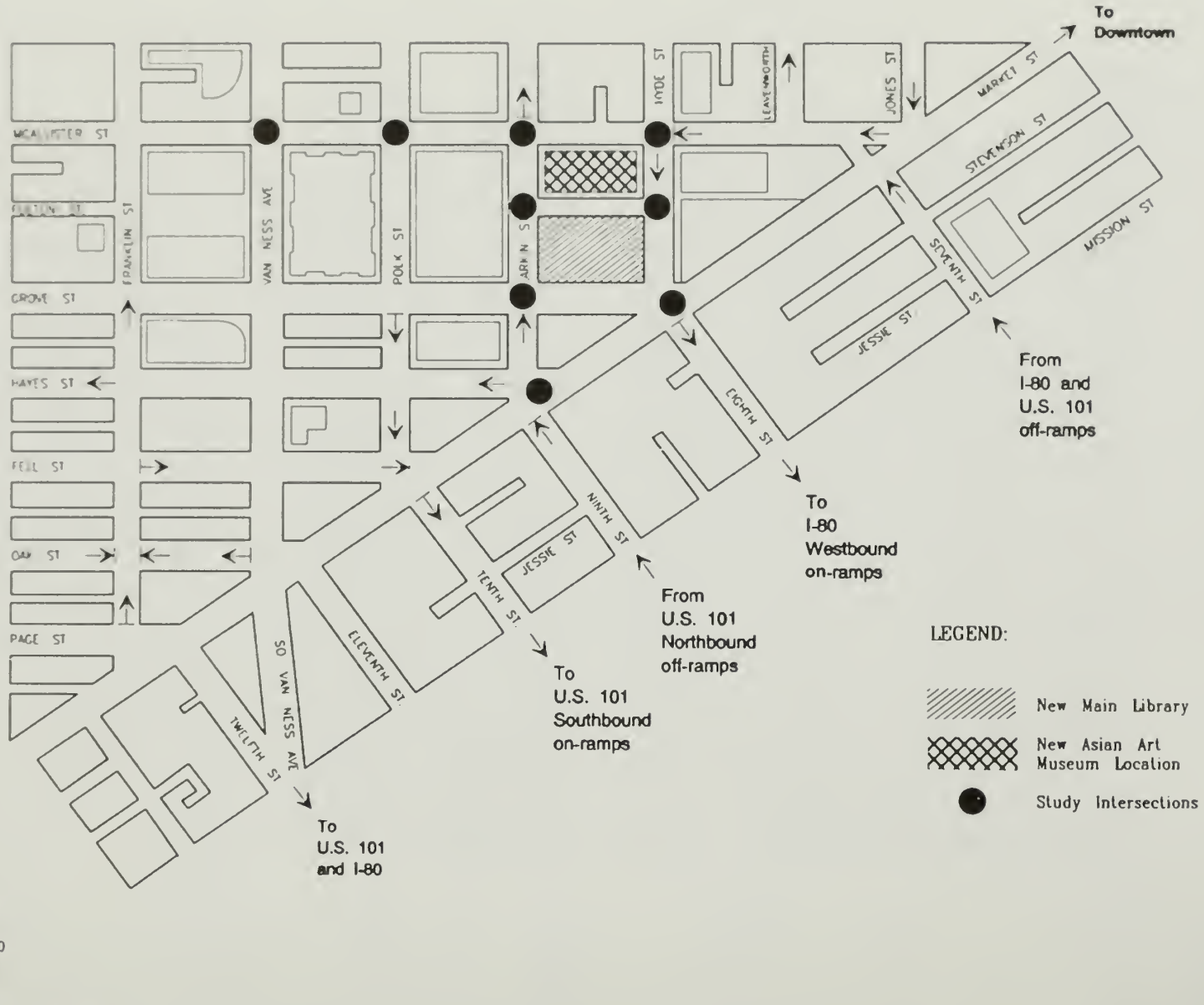
/a/ Capacity is defined as Level of Service E.

SOURCE: Environmental Science Associates, Inc. from *Transportation Research Circular No. 212*, Transportation Research Board, 1980.

TABLE D-3: VEHICULAR LEVELS OF SERVICE AT UNSIGNALIZED INTERSECTIONS

Level of Service	Description
A	Level of Service A describes a condition where the approach to an intersection appears quite open and turning movements are made easily. Little or no delay is experienced. The traffic operation can generally be described as excellent.
B	Level of Service B describes a condition where the approach to an intersection is occasionally fully used and some delays may be encountered. Many drivers begin to feel somewhat restricted within groups of vehicles. The traffic operation can generally be described as very good.
C	Level of Service C describes a condition where the approach to an intersection is often fully used and back-ups may occur behind turning vehicles. Most drivers feel somewhat restricted, but not objectionably so. The traffic operation can generally be described as good.
D	Level of Service D describes a condition of increasing restriction causing substantial delays and queues of vehicles on approaches to the intersection during short times within the peak period. The traffic operation can generally be described as fair.
E	Capacity occurs at Level of Service E. It represents the most vehicles that any particular intersection can accommodate. At capacity there may be long queues of vehicles waiting up-stream of the intersection and vehicles may experience very long delays. The traffic operation can generally be described as poor.
F	Level of Service F represents a jammed condition. Insufficient gaps of suitable size exist to permit movement of vehicles out of the approach under consideration. Extremely long delays occur, and drivers may select smaller than usual gaps. In such cases, safety may be a problem. This condition usually warrants improvement to the intersection.

SOURCE: Environmental Science Associates, Inc. from *Highway Capacity Manual*, Special Report 209, Transportation Research Board, 1985.



SOURCE: Wilbur Smith Associates

Figure D-2
Existing Street Network

TABLE D-4: PEDESTRIAN FLOW REGIMEN

Flow Regime/a/	Choice	Conflicts	Flow Rate (p/f/m)/b/
Open	Free Selection	None	less than 0.5
Unimpeded	Some Selection	Minor	0.5 to 2.0
Impeded	Some Selection	High Indirect Interaction	2.1 to 6.0
Constrained	Some Restriction	Multiple	6.1 to 10.0
Crowded	Restricted	High Probability	10.1 to 14.0
	Design Limit - Upper Limit of Desirable Flow		
Congested	All Reduced	Frequent	14.1 to 18.0
Jammed	Shuffle Only	Unavoidable	Not applicable/c/

/a/ Photographs of these conditions are shown in Figure D-2.
/b/ P/F/M = Pedestrians per foot of effective sidewalk width per minute.
/c/ For Jammed Flow, the (attempted) flow rate degrades to zero at complete breakdown.

SOURCE: Pushkarev and Zupan, *Urban Space for Pedestrians*, MIT Press, 1975, Cambridge, MA.

JAMMED FLOW. Space per pedestrian in this view is about 3.8 sq ft (0.35 m^2). This is representative of the lower half of the speed-flow curve, where only shuffling movement is possible and even the extremely uncomfortable maximum flow rate of 25 people per min per ft (82 per m) of walkway width cannot be attained due to lack of space. Photograph by Louis B. Schlivek.

The threshold of CONGESTED FLOW. The first eleven people in the view have about 16 sq ft (1.5 m^2) per person, corresponding to a flow rate of about 15 people per min per ft (49 per m) of walkway width. The beginnings of congestion are evident in bodily conflicts affecting at least three of the walkers, and in blocked opportunities for walking at a normal pace.

The onset of CROWDED FLOW, with an average of about 24 sq ft (2.2 m^2) per person, or a flow rate of about 10 people per min per ft (33 per m) of walkway width. Choice of speed is partially restricted, the probability of conflicts is fairly high, passing is difficult. Voluntary groups of two, of which two can be seen in the picture, are maintained, but cause interference. Note also some overflow into the vehicular roadway in the background.

The midpoint of the CONSTRAINED FLOW range, with about 30 sq ft (2.8 m^2) per person, or a flow rate of about 8 people per min per ft (26 per m) of walkway width. The choice of speed is occasionally restricted, crossing and passing movements are possible, but with interference and with the likelihood of conflicts. The man in the dark suit seems to be able to cross in front of the two women in the foreground quite freely, but in the background near the curb people are having difficulty with passing maneuvers.

SF Main Library ■

SOURCE: Pushkarev and Zupan

Figure D-3
Photos of Pedestrial Flow Levels

The borderline between IMPEDED and UNIMPEDED FLOW, with about 130 sq ft (12 m^2) per person, or a flow rate of about 2 people per min per ft (6.5 per m) of walkway width. Individuals as well as couples visible in this view have a choice of speed and direction of movement. This rate of flow is recommended for design of outdoor walkways in office districts and other less dense parts of downtown areas.

The uneven nature of UNIMPEDED FLOW. While the people walking in the plaza which is 17 ft (5.2 m) wide, compared to 23 ft (7 m) in the preceding picture have almost 130 sq ft (12 m^2) per person on the average, the space allocation for the eight individuals in the foreground is closer to 70 sq ft (6.4 m^2). Thus, indirect interaction with others is still quite frequent in the upper range of UNIMPEDED FLOW.

The midpoint of the IMPEDED FLOW range, with about 75 sq ft (6.9 m^2) per person, or a flow rate of about 4 people per min per ft (13 per m) of walkway width. Physical conflicts are absent, but pedestrian navigation does require constant indirect interaction with others. This rate of flow is recommended as an upper limit for the design of outdoor walkways in shopping districts and other dense parts of downtown areas.

Lower range of UNIMPEDED movement, approaching OPEN FLOW. About 350 sq ft (32.2 m^2) per person, or a flow rate of less than 1 person per min per ft (3.3 per m) of walkway width. Complete freedom to select the speed and direction of movement; individuals behave quite independently of each other. For a design standard based solely on pedestrian density, this amount of space can be considered excessive.

SF Main Library

SOURCE: Pushkarev and Zupan

Figure D-3 (continued)
Photos of Pedestrian Flow Levels

TABLE D-5: PARKING DEMAND CALCULATIONS

PARKING METHODOLOGY

Patrons: Peak number of patron entrances or exits x duration of visit (hours) x percent of patrons driving driving alone ÷ number of persons/vehicle = peak-hour parking demand

Employees: Number of employees present on weekday x percent of employees driving alone ÷ number of persons per vehicle = employee parking demand

Patrons	Peak number of patrons	Duration of visit (hrs.)	Percent of patrons drive	Persons per vehicle	Peak-hour pkg. demand
New Main Library (net new)	545	1	20	1.3	84
Asian Art Museum (new)	500	2	29	1.4	207
Project Patrons Total					291

Employees	Number of employees /a/	Percent of empl. driving	Employee pkg. demand
New Main Library (net new)	4	15.8	**1**
Asian Art Museum (new)	135	15.8	**21**
Project Employees Total			**22**
PROJECT-GENERATED DEMAND			**313**

Displaced Parking	Avg. Weekday	Peak non-spec. event weekday	Special event weekday
Fulton Street	48	92	92
Marshall Square	97	108	128
Project site	10	10	10
Total displaced parking	155	210	230

TOTAL DEMAND		
	Avg. weekday	**468**
	Peak non-special event wkdy.	**523**
	Special event weekday	**543**

/a/ - For library employees, 75% would be present on a weekday. The figure in the table represents 75% of a total of 5 net new full-time-equivalent library employees.

APPENDIX E: AIR QUALITY

TABLE E-1: SAN FRANCISCO AIR POLLUTANT SUMMARY, 1987-1989

Pollutant	Standard	Monitoring Data by Year /a/ 1987	1988	1989
Ozone (O_3)				
Highest 1-hr average, ppm/b/	0.09/c/	0.09	0.09	0.08
Number of standard excesses		0	0	0
Carbon Monoxide (CO)				
Highest 1-hr average, ppm	20.0/c/	17.0	15.0	14.0
Number of standard excesses		0	0	0
Highest 8-hr average, ppm	9.0/c/	10.0	12.8	9.0
Number of standard excesses		1	1	0
Nitrogen Dioxide (NO_2)				
Highest 1-hr average, ppm	0.25/c/	0.15	0.12	0.14/e/
Number of standard excesses		0	0	0
Sulfur Dioxide (SO_2)				
Highest 24-hr average, ppm	0.05/d,f/	0.01	0.01	0.02
Number of standard excesses		0	0	0
Particulate Matter-10 Micron (PM_{10})				
Highest 24-hr average, ug/m^3 /b/	50/c/	65	117	101
Number of standard excesses /g/		4	5	13
Annual Geometric Mean, ug/m^3	30/c/	21.7	23.1	31.6
Lead				
Highest 30-day average, ug/m^3	1.5/d/	0.10	0.11	0.09
Number of standard excesses		0	0	0

NOTES: NR = Not Recorded; NA = Not Applicable
Underlined values indicate violations of standards.

/a/ CO data were collected at the BAAQMD monitoring station at 939 Ellis Street; all other data were collected at the Arkansas Street station.
/b/ ppm - parts per million; ug/m^3 - micrograms per cubic meter.
/c/ State standard, not to be exceeded.
/d/ State standard, not to be equaled or exceeded.
/e/ Data presented are valid, but incomplete in that an insufficient number of valid data points were collected to meet EPA and/or ARB criteria for representativeness.
/f/ State standard applies at locations where state 1-hour ozone or particulate standards are violated. Federal standard of 365 ug/m^3 applies elsewhere.
/g/ Measured every six days.

SOURCE: California Air Resources Board, *Air Quality Data Summaries*, 1987-1989.

APPENDIX F: TYPICAL NOISE LEVELS

TABLE F-1: TYPICAL NOISE LEVELS

	Decibels	
	110	
		Pile Driver (from 50 feet)
	100	
Very Loud		GMC 8 Cylinder MUNI Bus Accelerating at 15 Feet
	90	
		MUNI Streetcar, 25 MPH at 25 Feet
	80	
Loud		
	70	Typical Passenger car, 25 MPH at 25 Feet
	60	Normal Speech at 3 Feet
		Acceptable Residential Outdoor Level - EPA Standard
Quiet		
	50	
		Small Town Residential Cul-de-Sac
	40	
		Whisper at 3 Feet
Very Quiet		
	30	

SOURCE: Department of City Planning, Transportation Noise, Environmental Protection Element of the Comprehensive Plan of San Francisco, December 1987.

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